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Railway Age

Founded in 1856

A Simple Change of Gears Does the Trick

Since General Motors first brought Diesel power to the railroads thirteen years ago—Electro-Motive engineers have been working toward the production of *one* Diesel locomotive that would meet all freight and a wide range of passenger requirements.*

That locomotive is here in the new, versatile, wide-range General Motors F3. Any one of seven standard gear ratio options may be specified. Characteristics of the basic locomotive, dependent upon the gear ratio specified, may range from that of the heaviest freight hauler, through that of an outstanding combination freight and passenger locomotive on up to that of a 100 mile an hour heavy-duty passenger locomotive. Such is the degree of economic standardization attained in the F3 that at any time the railroad finds it useful to do so the gear ratios can be changed, in the railroad's own shops, to fit the locomotive to the desired application. The simple change of gears does the trick.

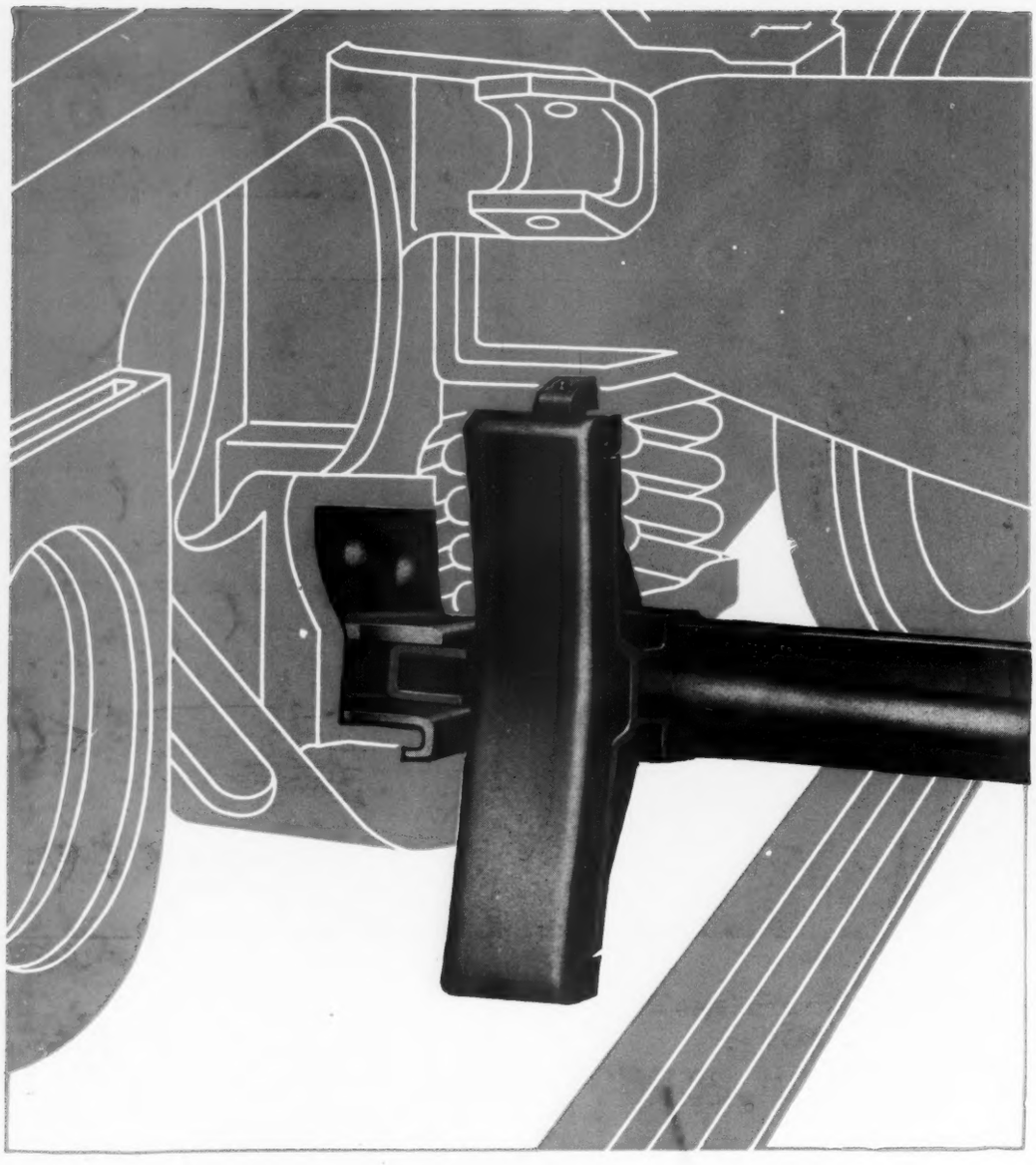
The F3 is the result of know-how gained from concentration of an entire organization upon the design and building of Diesel locomotives only, plus the experience of handling billions of ton miles, and millions of passenger train miles with General Motors locomotives under every conceivable condition over a twelve-year period.

**Electro-Motive continues to build the improved General Motors streamliner passenger locomotive for ultra-high-speed operation of light-weight trains.*

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS — LA GRANGE, ILL.



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OF ALL NEW FREIGHT CARS ORDERED FOR DOMESTIC SERVICE IN 1946 WILL BE EQUIPPED WITH UNIT TRUCKS.

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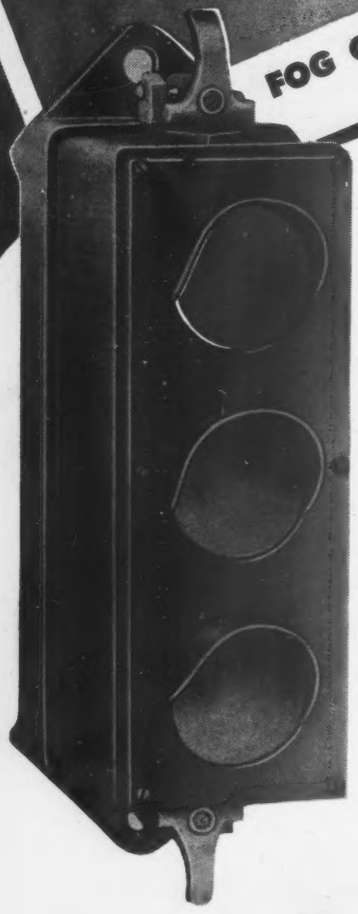

Overcoming Nature's Handicaps!

ON many American railroads, "Union" continuously-controlled Cab Signals are expediting traffic, increasing safety of train operation and promoting "on-time" performance. These modern signals ride in the cab in full view of the engine crew. They indicate instantly any changed condition on the track ahead and permit the engineman to increase speed at any point where a less restrictive indication is received. And because "Union" Cab Signals remove the danger of missing or misinterpreting wayside signals when vision is obscured, scheduled speeds are maintained despite fog, snow, sleet, rain or smoke.

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RAILWAY AGE

What the A. A. R. Public Relations Program Has Accomplished

In getting along together, people have to come to some kind of agreement or compromise on many questions which cannot be answered by concrete and ascertainable facts. Regarding such questions, the only guideposts are opinions—some of them grounded in experience, some in imagination, some in wisdom, and some in folly, but all of them fallible. There are many equally important questions, however, which can be resolved beyond all doubt merely by finding the facts. The preference some people show for trying to settle questions by argument and rhetoric, where a simple survey of tangible evidence would yield an incontrovertible answer, is a trait which, however excusable in the light of human frailty, certainly does not accelerate social progress. The physical sciences, including the particularly productive one of engineering, began to go forward when their practitioners substituted counting, weighing, and testing for speculation and argument—and the result was structures and machines which could be depended upon to do the job expected of them. With economic and political questions, however, augurs and orators are still frequently preferred to observation and enumeration as determinants of policy.

Results Proportional to Effort

The questions which have been raised as to the efficacy of the public relations activities of the Association of American Railroads are a case in point. Some of these questions lie wholly within the field of opinion, and cannot be resolved merely by the observation and weighing of tangible facts—but a far larger proportion involve evidence which is available or can be obtained in quantitative form, and calls for nothing more than a willingness to be guided by facts rather than by prejudice.

It is, for example, a tangible fact and no mere opinion that public esteem for the railroads under private operation steadily increased throughout the war years, when the quality of railroad service, especially passenger service which makes the most direct contact with the public, was definitely sub-standard. This growth of the railroads in public estimation in spite of adverse circumstances cannot be otherwise attributed than to the railroads' program for informing the public of the importance of their service, of their difficulties, and of their accomplishments in overcoming these difficulties in spite of serious obstacles. The Association of American Railroads was not, of course, the only source of such public information, but it was by far the largest one. It is most significant that surveys of popular belief disclose that the public is well informed on such matters as railroad efficiency and the importance of railroad service to the country, which the A. A. R. advertisements have emphasized, and is poorly informed on the controversial issues which the A. A. R. program has largely avoided.

Effective in Preserving Private Ownership

To contend in the face of such evidence, as some have done, that the public relations program of the Association of American Railroads has been a "flat failure" and a "waste of money" is to subordinate the quest for truth to the pleasure of controversy. Indeed, considering the receptivity of the public to government operation in 1941 and the proclivity of the left-wing New Deal to that development, there might well not have been any private railroad managements in 1947 left to debate the effectiveness of A. A. R. public relations efforts, if these activities had not been highly successful in their fundamental objective of educating the public in the merits of private operation. Whatever fault may be found with the Association of American Railroads for failure, so far, to realize the comprehensive objectives foreseen for it when it was organized, this much must at least be conceded in its favor: It convinced official Washington that private operation could produce more and better transportation in time of crisis than government operation could do, and it effectively impressed the same opinion on the public at large. Can such a record be dismissed as a "flat failure"; and can the necessary cost be adjudged a "waste of money"?

Aside from its advertising program, the A. A. R.'s public relations activities have two other aspects which

appear to have been poorly publicized within the railroad industry itself. These are its distribution of high-quality educational literature to teachers and to more than 1,000,000 school children each year; and its inquiry-answering service, which replies to almost 1,000 letters a week, answering all manner of questions about the railroads. These responses range all the way from resolving questions which stem merely from idle curiosity to extensive research, necessary to provide material for authors and editors who are preparing articles on railroad subjects. Anyone inclined to condemn the A. A. R. public relations program out of hand should forbear final judgment until he weighs the sheer magnitude of this inquiry-answering effort and considers it in the light of the well-recognized principle of public relations, namely, that no program of public information can be a success which does not provide a means of answering the questions raised by the public itself.

Servant or Leader?

The approach of adjudging the results of the A. A. R. public relations program by an examination of available facts rather than by appeals to emotion can be used to disclose the weaknesses of the program as well as the degree of its success. For example, the surveys of public opinion conducted under the auspices of the A. A. R., and of employee opinion by this paper, reveal that both the public and employees are almost totally and dangerously ignorant of the railroads' competitive and "featherbed" handicaps and of their inability to earn a return adequate to their continued financing by private capital. But is the failure of the A. A. R. public relations program to educate the public and employees on these questions ascribable to lack of competence and courage on the part of those in charge of the program, or should it, rather, be laid at the door of the individual members of the A. A. R. itself, who have assigned the association its powers and its responsibilities?

Do the individual railroads want an association which will exercise initiative and statesmanship in the solution of broad questions of public policy which are too complex and involved for managements of individual properties to attend to properly? Or, on the contrary, is it the preponderant desire of the individual carriers that their association should be a "least common denominator" organization—with a restricted program and acting merely as the servant of the individual managements rather than their leader?

These are fundamental questions, the answers to which should not be a mere matter of opinion. The same is true of the much debated question of the comparative effectiveness of magazine, radio and newspaper advertising. Each has its proper sphere and there are recognized scientific techniques to determine which medium will be most effective for a given type of advertising campaign. All of these are questions of fact—fully as much so as the ability of a certain bridge to stand up under the load of a locomotive of known axle weight. Railroad men do not argue about the bridge, but rely on competent evidence as to the facts. When they adopt the same approach to questions of public relations and industry policy, they will begin to show the same progress in their social relations which they have long attained in the solution of their technological problems.

Shop Production Possibilities

Although the consolidation of a particular kind of locomotive and car maintenance work at one geographical location is a policy being followed to a limited extent by many railroads, this trend toward the centralization of repairs is one the value of which may not be fully appreciated. This comment is made because an eastern railroad that had set up a program for the concentration of all its wheel and axle operations at a few strategic points has found that the output of the first shop constructed under this program has been large enough to make the need for all the shops contemplated very questionable.

The record made by this shop is a demonstration of the value of laying out a plant for production work and then installing the right kind of equipment for the job. It shows what careful planning by men with knowledge of the possibilities of machine tools and material-handling devices can do to increase the output per man-hour and decrease the costs. It is really lifting a page out of the book of the automobile and other industries that have attained a high degree of efficiency by using assembly-line methods.

Unless the work can be centralized the railroads seldom have the volume necessary to justify an investigation of production methods, because without the volume to keep high-cost machine tools reasonably busy there is little prospect of getting an adequate return out of the investment. Once it has been established that there is a sufficient amount of repetitive work that can be concentrated at one point to make the laying out and equipping of a shop feasible, an opportunity is presented for the development of a shop arrangement in which the location of the machine tools is determined by the natural sequence of machining operations. Such a layout, supplemented by material-handling equipment that reduces the non-productive time required for moving the work between actual machining operations, has a tremendous influence on the actual time a machine tool is turning out useful work. The material-handling equipment makes a further contribution by eliminating most of the back-breaking work so frequently found in railroad shops.

While the most desirable conditions for the full utilization of the production possibilities of new equipment are generally those requiring a complete new shop arrangement, the same idea is being applied on a smaller scale on several railroads by the use of one specialized machine to furnish the entire needs of the railroad for one particular part. As an example, four machine tools that can be utilized only one-fourth of the time in completing the work at one particular shop can be placed on a full-time basis at one point to do all the work demanded by four shops. This arrangement eliminates unneeded facilities and it usually results in better workmanship because the purchase of the best equipment available can be justified on the basis of full-time use.

The experience of the eastern railroad with its first production wheel shop and of others on a more modest basis should be a guide to all railroads in looking into the potential savings inherent in well-arranged and equipped-for-the-job shops.

The Cost of Economic Freedom

It has recently become fashionable to attack profits. All the evils of our current society arise out of profits, according to those who, having wearied of other slogans, have hit upon this one.

There are two ways to finance production and distribution: 1. Out of taxes; 2. Out of the savings of many individuals. In Soviet Russia, production is financed by the government out of taxes and borrowed money; in the United States it is financed largely by money borrowed from private sources and by investments out of private savings.

When production is financed out of savings, the industrial and distributive system is privately owned. The risk is taken by individuals. Their gains are their own; their losses are their own. Such a system depends upon competition among free individuals. Its objective is a profit which simply means a return for the use of money, a compensation for the provision of tools, equipment, premises and other means of production and distribution. But the individuals do not demand that profits be guaranteed or that obsolescence be protected. They have to take their chances. . . .

The Russians have abolished profits but they have also abolished human freedom. Profits are a payment for the use of money to be expended upon tools for production and distribution. For the word, profits, only one can be substituted, namely, taxes, as, for instance, when the government of the United States finances T. V. A. out of taxes, or the city of New York finances its overwhelming subway deficit out of taxes.

The difference between a profit and a tax is that the profit enriches its recipient while not adding greatly to the cost of operations; the tax impoverishes everybody while adding the same amount to the cost of operations. The profit often goes into private savings and adds to the reservoir of useful capital; the tax disappears in semi-economic, semi-political activities. Profits are beneficial to individuals; taxes level downward.

It is easy for a dramatic orator to make a devil out of profits and to find receptive listeners, but his alternative can only be production out of taxation in a despotic political system. Freedom has its costs, and in the United States, economic freedom has cost about 4 per cent per annum. It is not too high a price, particularly when one sees what has happened to human beings in those countries where the government owns the means of production and distribution.

—George E. Sokolsky in the New York Sun

Who's Crying for High Train Speeds?

How fast does the public, or at least most of it, want to travel on the railroads? For many years some railroad men have been talking of high-speed operation—90, 100, and even the possibility of 125 m.p.h.—as though people had been vigorously clamoring for such speeds, and the attainment of them was the only thing that would attract passengers and permit effective competition with planes. At the same time, many other railroad men have been advocating faster overall schedules through sustained moderate speeds up to 60 or 75 m.p.h., with top speeds of about 90 m.p.h. where conditions are particularly favorable. Which group is right?

The correct answer to this question is of vital importance to both the public and the railroads. A limited degree of questioning suggests that it is not high speed, as such, that the public desires, but rather smooth operation with assured safety, comfort, cleanliness and luxury, at rational speeds for on-the-ground travel—and on-time performance.

Many trains today are operated at high speeds to permit later departures and earlier arrivals, when questioning might discover that few passengers care particularly about either, at least to the extent of affecting their choice of a means of travel. As a matter of fact, many people may dislike the discomfort of excessively high speeds; may prefer arrivals after 7 or 8 a.m. to being forced out at an earlier hour; and may be downright "mad" with the late performance that too often accompanies excessively tight operating schedules. The acceptance of the streamliner has been demonstrated beyond question, and most such trains operate on accelerated, although not necessarily high-speed schedules. But has anyone determined whether it is their generally higher speeds, or the comfort, luxury and cleanliness which they afford, that have generated this acceptance? Who can say for a certainty that unusually high speeds in some instances may not have acted more as a deterrent to acceptance rather than as an asset?

The problems of the railroads are not simplified and costs are not reduced by very high speeds—either in train operation or in maintenance of equipment and roadway. Since this is true, it follows that some potent reason is needed for adopting these speeds—a reason which would be offered by overwhelming public demand. If the railroads don't actually *know* what the public wants in this respect, they are shooting in the dark toward a goal that will cost them a lot of money.

The traveling public has been questioned repeatedly by the railroads upon its preferences in travel, even to its taste in color schemes and menus, and has had a part in the naming of many streamliners. Why not do more intensive questioning on the matter of speed? Let's find out for sure how much of this costly quality is needed to get the business, and let the facts determine the policy.

Index to Volume 121

The indexes to the latest volume of the *Railway Age*, July to December, 1946, are now ready for distribution, and copies may be had by those subscribers desiring them. Requests should be addressed to the Circulation Department, *Railway Age*, 30 Church street, New York 7. Subscribers who have in previous years made application for the index need not apply again; they will continue to receive it as long as they continue to subscribe.

B. & O.'s "Arm Chair on Wheels"

"The Cincinnatians," twin five-car, all-coach trains placed in operation between Baltimore, Washington and Cincinnati on January 19, are praised by patrons for their comforts and services

Mrs. Robert A. Taft broke a bottle of champagne at the christening in Washington as Roy B. White, B. & O. president, and Fred L. Maddox, engineman, supervised the job

WE believe that the train will establish a new standard of comfort and convenience for day coach riders." These words of President Roy B. White of the Baltimore & Ohio, spoken at the christening ceremonies of one of "The Cincinnatian" twins at Washington, D. C., are indicative of the character of these five-car daylight trains placed in service on January 19 between Baltimore, Md., Washington, D. C., and Cincinnati, Ohio. Designed by the B. & O. and built at the railroad's Mt. Clare shops, the twin trains have the exterior styling and the interior appointments and arrangements that have been found to be attractive to travelers look-

ing for low-cost comfortable transportation.

The "new standard of comfort and convenience" built into the physical features of "The Cincinnatian" and made a part of the train in the form of service features is a combination of several factors that have proved to be appealing to the railroads' customers. They include the use of technical advances in passenger-car design and equipment of known value developed by the railroads and the manufacturers of car specialties, a pleasing interior and exterior decorative treatment and styling, the attractiveness of special feature cars to coach passengers, and courteous service coupled with the extras associated usually with higher-cost or extra-fare train accommodations.

Some of the technical developments incorporated in the train are relatively new, others are the applications of materials and equipment that have been available for some time but which have not enjoyed widespread use in passenger cars. Some are obvious to the passengers while others, although hidden from view, either contribute indirectly to their comfort or directly to the dependability of the service. Among the former are the reclining seats, the fluorescent lighting and the seat lights with individual control, the conditioning of the air, the sound system with loud speakers in every car for train announcements and radio reception, the wide windows with Venetian blinds and the electric water coolers. Less obvious are construction features such as the sound-deadening and vibration-damping materials used on the trucks, the filters for cleaning the air, the rounding of corners to promote cleanliness, the roller bearings on the car trucks, the telephone system for communication between the members of the crew, and the ingenious equipment making some of the conveniences possible.

Some of the Extras

The styling and decorative treatment, described later in detail, consist of the streamline exterior with the entire train, including the locomotive, designed as a single complete unit, and a harmonious interior and exterior color scheme. The exterior is in the familiar royal blue of the B. & O. set off by painted aluminum trim and lettering. The interiors of the cars, except for the buffet-lounge and the dining section of the observation-dining car, have different color treatments with rust, green and blue predominating in the three coaches, red in the buffet-lounge and the dining room, and green and yellow in the observation section.

In each of the twin trains the seats in the three coaches are the only ones that are revenue producing as such, the other two cars being open to any passengers desiring to avail themselves of their conveniences. In the buffet-lounge section of the first car the passengers may be served light lunches and beverages in a cheerful atmosphere or they may use the lounge facilities in which to sit and chat. The diner-observation car gives them the opportunity to enjoy a complete dinner or to read, write, or watch the scenery along the right of way. Both of these cars afford the passengers space in which to move around and relax, a change that is welcomed, particularly on the longer trips, by coach travelers heretofore restricted to their coach seats.

The services on "The Cincinnatian" not generally available to the occupants of coaches are the reservations of seats, the attendant in each coach to look after the passengers' comfort and baggage, the stewardess-nurse to care for those who may require special attention such as ill persons and infants, and the transmission of train announcements and radio broadcasts through the loud speakers in each car. The reservations of coach seats and the assignment of an attendant to each coach are not innovations to B. & O. patrons, because these services have been available on "The Royal Blue" and other trains of the system for many years; they are services that have been helpful in making coach travel a pleasure.

The stewardess-nurse, in addition to attending to the needs of the passengers, makes a check of each coach after every stop to determine the destination and requirements of the occupants and also announces points of interest to the entire train through the loud speakers of the sound system. She has her headquarters in a room, equipped with a sofa, medicine cabinets and private toilet, in the second or middle coach.

Train Announcements

"Attention please, this is your train conductor speaking. We will arrive in Martinsburg in three minutes." This is a typical announcement transmitted from the conductor's microphone at his "office" in the first car to the passengers throughout the train via the loud speakers in each car. Or the announcement coming through the speaker may be from the stewardess-nurse speaking through the microphone in her room, "Attention please, this is your stewardess speaking. We are now passing through the Cheat river canyon, one of the outstanding scenic spots of the Alleghenies, etc." When the sound system is not used for announcements it may be employed for the reception of the radio broadcasts. Only those having national significance, such as a speech of the President or a world series game, are broadcast, and these are interrupted automatically when the microphones are used by the conductor, stewardess-nurse or the dining-car steward.

On the fastest train schedule ever made between Baltimore, Washington and Cincinnati the train traverses the

"The Cincinnatian" steps along in making the 570-mile run from Baltimore, Maryland, to Cincinnati, Ohio, on a tight schedule

"The Cincinnatians" are hauled by modified President-class locomotives

570 miles from Baltimore in 12½ hours (from Washington in 11½ hours) and makes 11 scheduled stops between Baltimore and Cincinnati. The elapsed time is the same in both directions with the eastbound train leaving Cincinnati at 8:45 a. m. and the westbound train pulling out of Baltimore at 8:00 a. m. In making this schedule the westbound train runs up the Potomac River valley, traverses the Alleghenies with a 2.5 per cent ruling grade between Keyser and Grafton, West Virginia, drops down to Parkersburg, West Virginia, and thence across Ohio to Cincinnati. Along the route, Baltimore, Washington and Cincinnati are the only large cities, the remaining stops having relatively small populations.

Traffic Potential and Operation

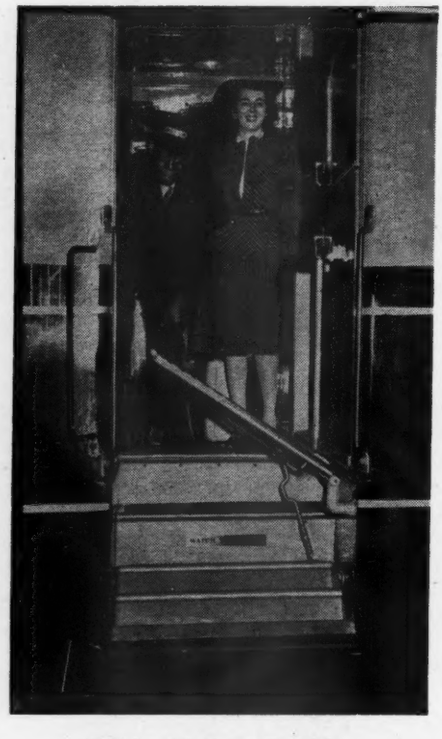
Leaving Baltimore (Mt. Royal Station) at 8:00 a. m., the train stops at Camden Station, Baltimore, and then runs the 36.8 miles to Washington, arriving at Union Station at 8:50 a. m. Pulling out of Washington at 9 a. m. the train climbs about a one per cent grade for seven miles at Silver Spring, a suburb of Washington. Leaving here at 9:13 the 66.4-mile run is made up the Potomac valley through Harpers Ferry, where the Shenandoah meets the Potomac, to Martinsburg, W. Va., a community of 15,000. Moving out of Martinsburg at 10:23 a. m., "The Cincinnatian" scoots up the Potomac River grade to Patterson Creek where the train leaves the main line, taking a cut-off that bypasses Cumberland, Md., and meets it again at Rawlings, Md., whence it winds through the hills to Keyser, W. Va., approximately 85 miles west of Martinsburg. Keyser is a town of 7,500 population near the foot of the heavy grade running over the summit of the Alleghenies.

Leaving Keyser at 12:03 p. m. the run of 78 miles to Grafton is up or down heavy winding grades. The throttle of the streamliner's Pacific-type locomotive is wide open as it hauls the train without a helper up the 2.5 per cent ruling grade over the mountains to an elevation of over 2,600 feet at Altamont, W. Va. Dropping down the western slope of the mountains the train reaches the Cheat river and then climbs along this river's scenic canyon over a stiff grade to Tunnelton, W. Va., thence down grade into Grafton, arriving at 2:13 p. m.

Grafton is a railroad center of 7,500 population where locomotives are changed on both the eastbound and the westbound sections of "The Cincinnatian." After a five-minute stop the train pulls out for the 23-mile trip to Clarksburg, W. Va., an industrial city of 30,000. Leaving Clarksburg at 2:53 p. m. the next stop at 4:42 p. m. is 81 miles away at Parkersburg, W. Va., on the Ohio River, another city of 30,000 population. In the 103 miles from Grafton to Parkersburg the line is a series of up and down grades with a drop of about 400 feet between the two points.

In Ohio, stops are made at Athens, a town in the Hocking coal fields, and at Chillicothe, a city of 20,000 located 97 miles from Parkersburg. Between Parkersburg and Chillicothe the terrain is rolling with varying grades, the elevation of the two places being approximately the same. After leaving Chillicothe at 6:33 p. m. the train stops at Oakley and Winton Place, both suburbs of Cincinnati, and finally arrives at 8:30 p. m. at the end of its run, 96 miles from Chillicothe and 570 miles from Baltimore.

To enable the passengers to follow the progress of the train and also learn more about the communities through which they pass, they are given a folder, 4⅝ in. by 18 in., entitled "Sightseeing along the Route of the Cincinnatian." One side of the folder is a map showing the route of the train and the names of the cities and villages. In a horizontal line across the map and directly above or below each station stop is shown the time the train is due at that point (those times shown above the route are for the eastward schedule, those below are for the westward schedule). In addition, on another horizontal line, in smaller type, are shown the times the train is scheduled to pass intermediate points that are not station stops. On the reverse side of the folder brief statements about each city or village summarize information of historical or geographical significance about the communities.



"Richard" opens the door

What the Passengers Think

What do the passengers think of "The Cincinnatian"? To get the answer to this question the B. & O., believing that the train's true worth could be measured only by the opinions of the patrons, has just completed a survey covering the

first 30 days of operation during which cards asking for comments were distributed to each passenger and picked up by the stewardess. The returns have been exceedingly favorable to the train. It may be that passengers are overwhelmed by the change from the trains they have ridden in the past; but whatever the reason, they are almost unanimous in their praise.

Excerpts from a few of the hundreds of signed cards quoted here show what the passengers think of the train: "Like putting your favorite arm chair on wheels"; "It makes the life of a traveling man more pleasant"; "What we need is more trains of this type"; "A fine train with excellent service and delicious food at very reasonable prices. Will use it whenever possible"; "I'm selling B. & O. to friends and business people wherever I go"; "It's most pleasant and comfortable to ride on this train. We certainly need more trains like it"; "It is a pleasure to travel even with a three-months old baby as the stewardess was very kind and considerate and also a great help to her passengers"; "Our trip on 'The Cincinnatian' was the most comfortable we've ever experienced. It has pleasant personnel added to its luxurious atmosphere."

These comments are substantially the same as those received by members of the *Railway Age's* staff who made an informal survey of passenger opinion while riding the train. A common reaction was the comparing of the ride on "The Cincinnatian" with rides on other trains in which surroundings had been unpleasant and the personnel showed a lack of courtesy. A few stated that they normally traveled either by private automobile or by bus. Others volunteered the information that they had never made the trip before over the B. & O. and were making it then because of the service offered.

Suggestions and Criticisms

An average of five cards in every hundred have some criticism or suggestion, most of which are minor in nature. Typical of these are statements that the cars are either too hot or too cold (both statements have been made about the same car on the same day); ash trays should be installed at each seat (coach); not enough radio programs; too many radio programs; train doesn't stop at Oakland, Md.; larger rest rooms are needed; more music over the sound system; some want more announcements about points of historical interest. It is obvious that most of them are impractical of solution because of the variety of tastes.

With the train averaging about 150 passengers each way during the first three weeks of operation it is expected that it will be completely sold out as its availability becomes more generally known.

During the period the train has been in operation the patronage of other B. & O. trains has remained substantially at a normal level, an indication that most of the traffic on "The Cincinnatians" is new business.

The Steam Locomotives

Built at the railroad's Mt. Clare shops the four Pacific-type steam locomotives assigned to the trains are a modification of the President class with a streamline exterior and a styling that blends with the design of the cars in the train. The locomotives, Nos. 5301 to 5304, inclusive, carry a boiler pressure of 230 lb. per sq. in. and, with 27-in. by 28-in. cylinders and 80-in. driving wheels, they develop a tractive force of 50,000 lb. The total engine weight is 347,500 lb. with 211,000 lb. of the total on the drivers.

The locomotives are constructed with the General Steel Castings Corporation's one-piece engine bed and one-piece pilot, the latter being furnished with the retractable coupler of the Buckeye Steel Castings Company. All driving, engine-truck and trailing-truck wheels are equipped with Timken roller bearings. The main crank pins and the main and side rods are of vanadium steel. Valve gears of the Walschaerts type, controlled by Alco reverse gears, are used.

The boiler has the railroad's design of semi-watertube firebox. The firebox has a heating surface of 429 sq. ft. The

Partial List of Materials and Equipment on the Locomotives of the B. & O.'s "Cincinnatian"

Engine bed frame, tender water-bottom frame, engine-, trailer- and tender-truck frames	General Steel Castings Corp., Eddystone, Pa.
Driving, engine-truck, and trailer axles	Camden Forge Co., Camden, N. J.
Driving, engine-, trailer- and tender-truck roller bearings	Timken Roller Bearing Co., Canton, Ohio
Main driving wheels	Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.
Front and rear driving wheels; trailer-truck wheels	Penn Steel Castings Co., Chester, Pa.
Engine truck wheels	Bethlehem Steel Co., Bethlehem, Pa.
Pilot and coupler housing	General Steel Castings Corp., Eddystone, Pa.
Retractable pilot coupler and doors	Buckeye Steel Castings Co., Columbus, Ohio
Shoes and wedges	Atlantic Steel Castings Co., Chester, Pa.
Main and side-rod forgings	Camden Forge Co., Camden, N. J. Standard Steel Works, Division of Baldwin Locomotive Works, Burnham, Pa.
Valve and cylinder bushings	Hunt-Spiller Mfg. Corp., Boston, Mass.
Piston-rod and valve-stem packing	U. S. Metallic Packing Co., Philadelphia, Pa.
Cylinder by-pass valves	Viloco Railway Equipment Co., Chicago
Boiler	Baldwin Locomotive Works, Philadelphia, Pa.
Staybolts	Flannery Bolt Co., Bridgeville, Pa.
Superheater	Superheater Co., New York
Feedwater heater	Worthington Pump & Machinery Corp., Harrison, N. J.
Throttle	American Throttle Co., New York
Grates	Hulson Grate Co., Keokuk, Iowa
Brick arch	American Arch Co., New York
Plugs, washout and arch tube	Huron Mfg. Co., Detroit, Mich.
Lagging	United States Gypsum Co., Chicago
Safety valves	Coale Muffler & Safety Valve Co., Baltimore, Md.
Stoker	Standard Stoker Co., Inc., New York
Steam gages; air gages	Manning, Maxwell & Moore, Inc., Locomotive Equipment Div., Bridgeport, Conn.
Blow-off cocks	Viloco Railway Equipment Co., Chicago
Low-water alarm	Ohio Injector Co., Wadsworth, Ohio
Fire door	Franklin Railway Supply Co., New York
Injector	Ohio Injector Co., Wadsworth, Ohio
Running boards	Alan Wood Steel Co., Conshohocken, Pa.
Whistle	Star Brass Mfg. Co., Boston, Mass.
Speed recorder	Chicago Pneumatic Tool Co., New York
Power reverse gear	American Locomotive Co., New York
Lubricators:	
30-pint—10 feed, and dividers	Edna Brass Manufacturing Co., Cincinnati, Ohio
26-pint—8 feed	Nathan Manufacturing Co., New York
Air-pump	U. S. Metallic Packing Co., Philadelphia, Pa.
Air compressors and reservoir	New York Air Brake Co., Watertown, N. Y.
Air brakes	Westinghouse Air Brake Co., Wilmerding, Pa.
Brake shoes	American Brake Shoe Co., New York
Slack adjuster	Royal Railway Improvements Corp., Wilmington, Del.
Draft gear	W. H. Miner, Inc., Chicago
Radial buffers	Franklin Railway Supply Co., New York
Train control	General Railway Signal Co., Rochester, N. Y.
Flexible connections	Barco Manufacturing Co., Chicago
Side cab sight windows	Prime Manufacturing Co., Milwaukee, Wis.
Sanders	U. S. Metallic Packing Co., Philadelphia, Pa.
Bell ringer	Railway Service & Supply Corp., Indianapolis, Ind.
Blower valve	Coale Muffler & Safety Valve Co., Baltimore, Md.
Cylinder cocks	Viloco Railway Equipment Co., Chicago
Steam-heat connections	Barco Manufacturing Co., Chicago
Tender couplers	National Malleable & Steel Castings Co., Cleveland, Ohio
Tank valve	American Car & Foundry Co., New York
Engine truck pads	Fabreeka Products Co., Boston, Mass.
Cast-aluminum headlight and back-up light	Pyle-National Co., Chicago
Alemite fittings	Prime Manufacturing Co., Milwaukee, Wis.
Stainless steel bars	American Rolling Mill Co., Rustless Iron & Steel Division, Baltimore, Md.
Aluminum figures and letter	Pittsburgh Stamp Co., Inc., Pittsburgh, Pa.
Paint	E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Stainless-steel hand rail	Globe Steel Tubes Co., Milwaukee, Wis.
Aluminum alloy	Aluminum Co. of America, Pittsburgh, Pa.

The conductor has easy access to both telephone and public address equipment in his office in the buffet-lounge car

Tenders of greater capacity than the ones normally used with the President class have been placed back of these locomotives. They have a water capacity of 20,000 gallons and carry 25 tons of coal. The tenders are the rectangular type with General Steel Castings water-bottom frame. Timken roller bearings are applied to the six-wheel trucks.

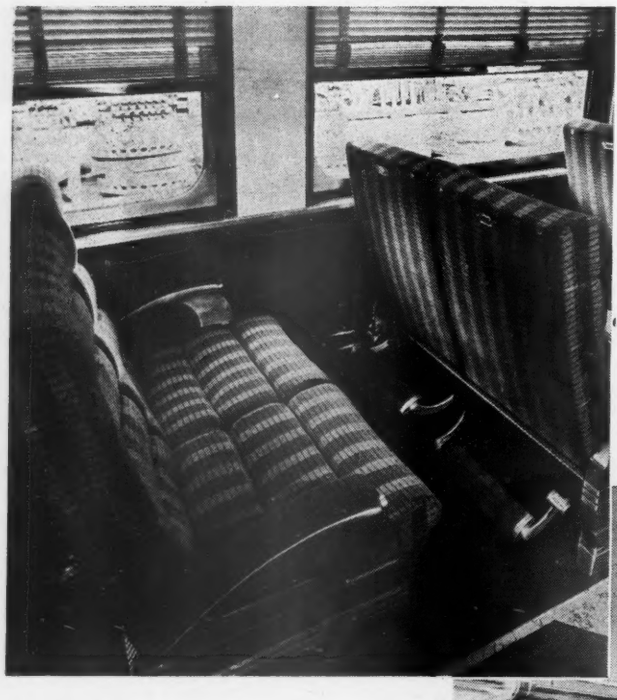
Streamlining the Locomotives

In streamlining the locomotives the characteristic form of steam locomotives was retained by leaving the running gear open to view and accessible for maintenance work. The tender design is such as to produce an unbroken surface between the rear of the tender and the train's first car. With the front end of the cab, the cab windows and the painted striping on both the locomotive and the tender slanted about 30 deg. from the vertical, a rakish appearance is given to the entire unit. The name of the train in aluminum lettering is applied on both sides of the tender near the front top corners.

The ten cars for the twin five-car trains were built at the Mt. Clare shops of the railroad using a conventional design of body structure and six-wheel trucks. The exterior of the train is streamline with turtle-back roofs, full-width diaphragms between the cars and skirting curving inwardly below the side sills. Each car has a length of 70 ft. over the end sills and approximately 79½ ft., coupler to coupler, except for the baggage-cafe-lounge car with a length between couplers of slightly over 76 ft. All wheels have 5-in. by 9-in. journals equipped with Hyatt roller bearings. To dampen vibrations and reduce noise Fabreeka has been applied throughout the trucks and at the couplers and draft gears.

Consist of the Train

The train is made up of a baggage-buffet-lounge car, three coaches and a dining-observation car. The first car has a 20-ft. baggage room, a 7-ft. by 8-ft. room with lockers and toilet for the crew, a 36-ft. buffet lounge, and a 5½-ft. space at the rear with the conductor's office on one side of the aisle and utility and control cabinets on the other. The next three cars are coaches with the middle one containing the quarters of the stewardess at the forward end. About three-fifths of the last car is devoted to the kitchen and dining room, the remainder being the observation lounge.



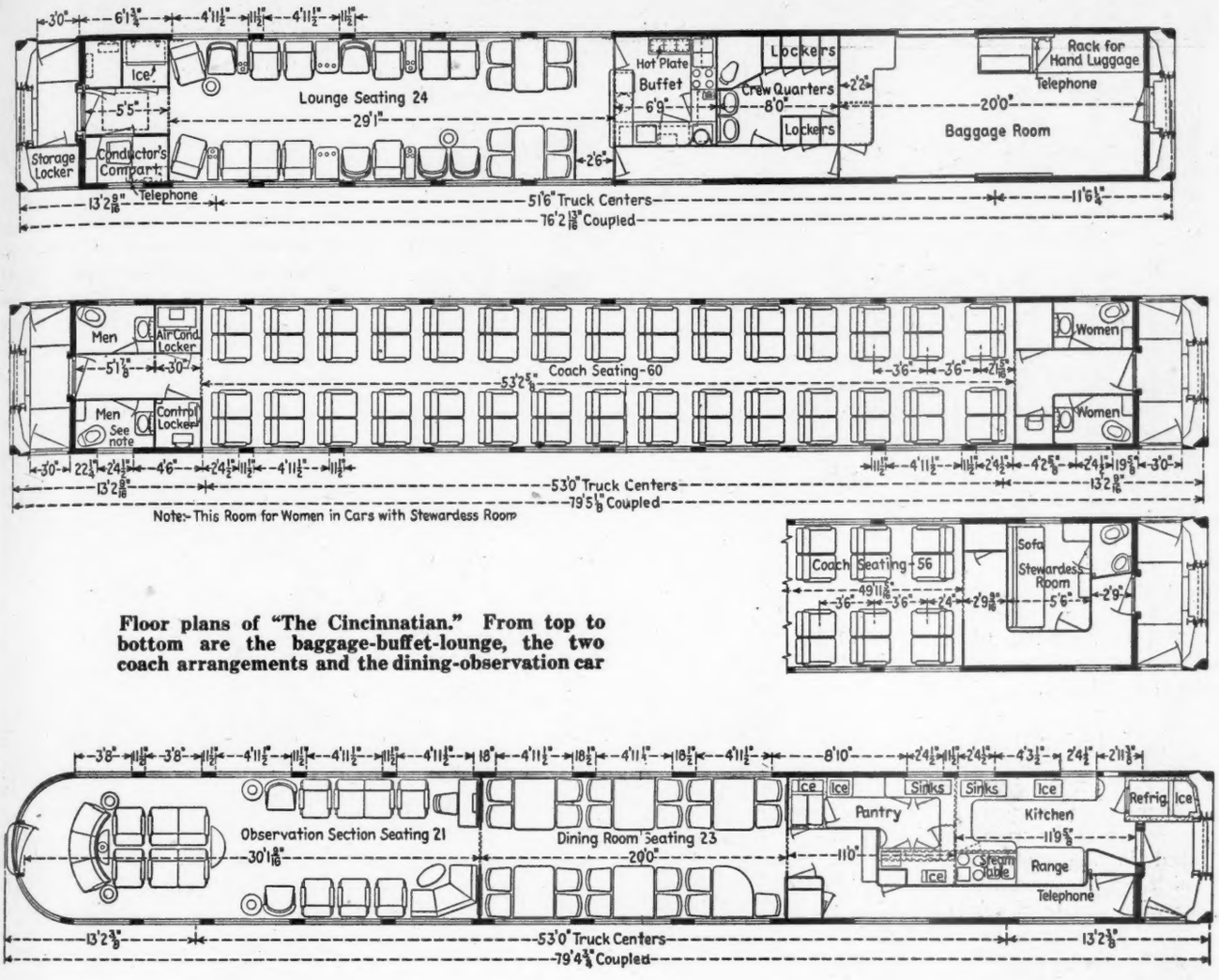
Left—Sleepy Hollow seats were utilized for the first time by the B. & O.

Below — Individual seat lights, depressed into the bottoms of the baggage racks, allow passengers to control seat lighting

total evaporative heating surface is 3,843 sq. ft.

The locomotives are equipped with Standard stokers and Worthington Type 5SA feedwater heaters with a capacity of 9,000 gallons per hour. Additional feeding capacity is furnished by an Ohio Type T-35 injector on each locomotive.

The locomotive and tender brake equipment is Westinghouse No. 6 ET and the two air compressors, located at the front end, are the New York Air Brake Company's 8½-in. cross-compound type.



Floor plans of "The Cincinnatian." From top to bottom are the baggage-buffet-lounge, the two coach arrangements and the dining-observation car

The three coaches in each train are nearly identical in basic design and arrangement of their facilities. Two have a seating capacity of 60 persons each, while the other, in which space is provided for the stewardess, seats 56. The coach seats, designed by Heywood-Wakefield, are the Sleepy Hollow type, installed on the B. & O. for the first time. The seats are spaced at 42-in. intervals to ensure ample leg room and to allow for the convenient adjustment of the seat backs and foot rests. The base of the seat measures 20 in. long by 19 in. wide and is raised 17 in. from the floor. The height of the back is 28 in. and the shoulder width 19 in., while arm rests are 8½ in. above the seat. A button adjusts the back to ten different positions, and depression of a lever moves the foot rest to any one of four positions.

Throughout the train, stress has been laid on providing a maximum amount of window space. The windows of the coaches, as well as those in the buffet-lounge and the observation-diner, are approximately 5 ft. wide with Adams & Westlake double-glass breather-type sashes with safety glass on the inside which will not cloud over. Da-lite blinds allow the passenger to control the amount of light coming in the window at all times.

Rest Rooms

Two rest rooms are located at each end of the two 60-passenger coaches—a pair at one end for men, those at the other for women. Each is equipped with a toilet, wash basin and a round mirror. The women's rest rooms have, in addition, a wide shelf, nearly knee high above the floor, on which to place personal belongings or even a child having its face and hands washed for a trip back to the diner. A metal paper-towel dispenser is mounted on the wall above and to one side of the wash basin. The towel and waste disposal unit is an enclosed metal receptacle immediately under the basin and attached to it. It may be emptied through a large aperture in the bottom of the container. The rest rooms and lavatories have tile floors and all corners, top and bottom, are rounded, presenting a neat appearance and facilitating cleaning operations.

In one of the coaches, however, the rest room facilities at the forward end have been replaced by a room for the stewardess. Her accommodations include a wide berth-type seat on which an ailing passenger can lie down, a closet in which to stow her personal belongings, cupboard space for her supplies, a small table at which she can fill out her reports, and a private toilet and wash room.

The coaches are fitted with baggage racks of steel tubing and flat metal slats that run the length of the cars over the seats. They are wide enough so that even slightly oversized luggage is not likely to protrude dangerously. Above each seat, and depressed into the bottom surface of the baggage racks, is an individual light which focuses on the seat beneath and which may be turned on or off at the will of the passenger.

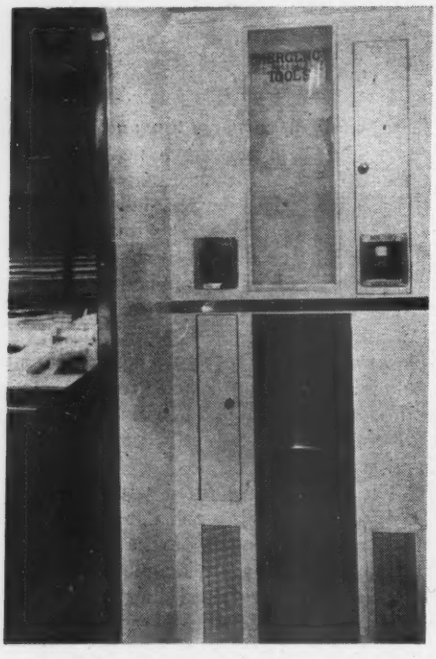
Electric water coolers in the coaches obviate the need of reicing old style coolers at station stops and also do away

Left—A section of the buffet-lounge car looking forward from the conductor's office. Below—Passengers get their order—with a smile from the waiter—in the buffet. The stewardess answers the query of a passenger

with the problems of waste water from the melting ice and the icing doors which open out into the aisle. Bottled spring water is served in the dining room and buffet.

Interior Decorations

The two trains have the same color scheme, in which each car differs from the others in the train. Walls are finished in Marlite, a high-gloss hard finish on a composition panel. With the wide variety of colors available, almost any color combination may be obtained. Many different colors have been used on "The Cincinnatian," and great care in the color selection has resulted in a *decor* that is both tasteful and practical. The molding and trim inside the cars is stainless steel, and the exterior is painted B. & O. royal blue with aluminum striping. Raised aluminum letters are used for the railroad's name and those of the cars.



The electric water coolers present a compact and efficient appearance

The major difference in the coaches lies in the color scheme employed. One coach, for example, has a Marlite royal blue base board, Marlite Velvetex suntan above it, trimmed with royal blue, and a ceiling of white faintly tinged with sun tan. The seats are Chase Needlepoint of a rust color. The floor is covered with a marbleized brown Linotyle with an aisle design in ivory.

Another coach uses Marlite forest green at its base, lighter green trimmed in forest green for the walls, and the ceiling of white has a tinted green shading. The floor covering is of Linotyle—marbleized black with an aisle design of 6-in. blocks of ivory. Its seats are upholstered in soft green Chase Needlepoint.

The coach which includes the private compartment for the stewardess utilizes Marlite royal blue at the base, pale yellow walls trimmed with royal blue, and a ceiling of white, tinted yellow. It has blue Chase Needlepoint seats. The Linotyle floor is black with ivory zigzag design in the aisle.

The Buffet-Lounge

Immediately behind the crew's quarters in the first car is located the buffet, with appointments of stainless steel, parts of which are visible to the passengers at the lounge end of the car. The buffet-lounge is equipped with two tables seating four persons each, plus numerous chairs conveniently placed with respect to small tables. Food and beverages are served at all hours to any location in the car. Indented aluminum-lined circles on the tops of the smaller tables act as glass holders and ash trays.

The conductor's office is in the rear end of the car, cut off from the other sections by a wall at the front and a waist-high partition on the side. His accommodations include a desk, a chair, shelf space, and a locker. Here, also, he has access to both telephone and public-address equipment.

The color scheme in the buffet-lounge

utilizes Marlite black base wall and trim, Persian red walls and a ceiling of white tinted red. Chairs and couches in the lounge are upholstered in both Chase Needlepoint and leather, and colors include blue, red, green and rust. The black Linotyle flooring is decorated with white modernistic design. This section has a seating capacity in chairs or on couches of 24.

The Dining-Observation Car

The two sections of the dining-observation car are partitioned off from each other, except for the doorway, by mirror-hung walls. The dining section repeats the Persian red walls, black trim and white ceiling motif of the buffet-lounge car and has Linotyle floor covering also. A vase of fresh flowers is placed on each table of the diner, as well as on the two large tables in the buffet. The dining tables are a combination of metal edging and Formica, five of them seating four persons and one seating three to allow easy access into the diner from the corridor. Chairs are of aluminum and red leather. The kitchen in this car is completely finished in stainless steel.

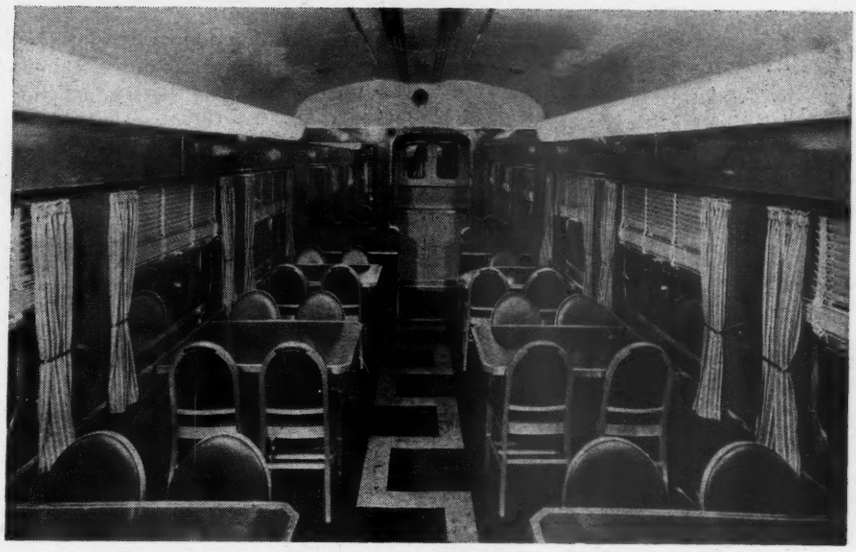
The observation section of the car has been painted a forest green at the base, while the walls are a soft shade of yellow and the ceiling is white with yellow tint. The only carpeting used on the train, a deep-pile rug in red, gold and black, is found here. The rear of the car is rounded, and a minimum of framework interferes with the passengers' view of the passing scenery.

Chairs and sofas in the observation lounge are upholstered either in Chase Needlepoint or leather and are light green, yellow, blue or red, and there are seats to accommodate 21 persons. There are adequate ash trays and several small tables (one large enough for a bridge game) to hold the glasses of those passengers who wish a drink served to them while in the car. Current magazines in leather-type binders are stored in a rack which also doubles as a table top. A writing table is in the forward left end of the observation section of the car.

A further feature of decoration is the use of either mirrors or pictures on the end walls of the cars. Adding another note of color to the train are the drapes used in the buffet, dining room and observation section. The fabric is a roman-stripe type in muted shades of green, tan, brown and rose which blend harmoniously with the other colors used. The curtains are held in position close to the walls by narrow metal brackets.

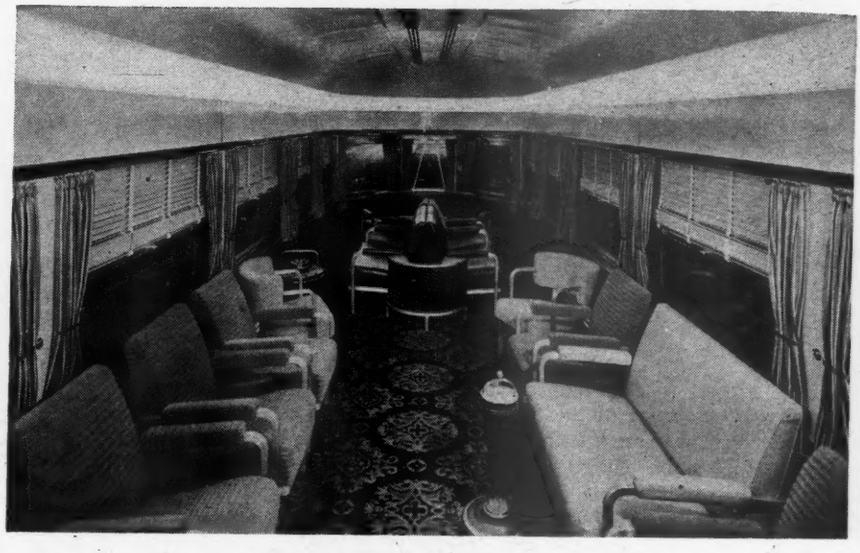
Radio and Public-Address

The train is equipped with both radio reception and a public-address system. There is a radio in the buffet-lounge car



When the tables in the dining section of the observation-diner are set up they are further brightened by flowers on the tables

Pictures of Cincinnati's waterfront and the Nation's capital decorate the walls in the observation section



Here one may watch the miles unroll

The stewardess uses the public address equipment in her compartment

which is controlled for local reception by the attendant in that car. Another receiving set in the observation car may be hooked in with the public-address system for reception of general programs or important news items.

The public-address system, which

Rear of the observation car

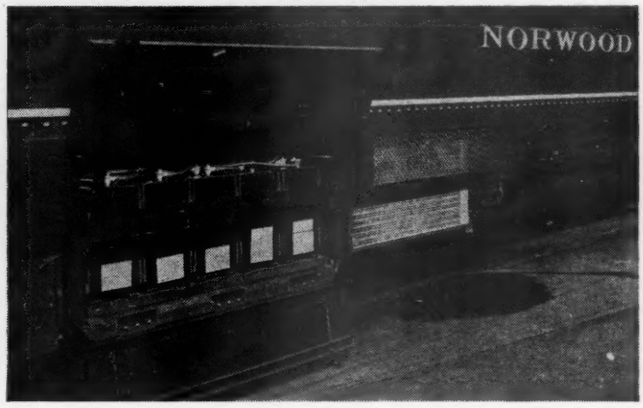
transmits to every car of the train, includes a microphone in the conductor's office in the buffet-lounge, a second located in the steward's compartment of the dining car for the use of the steward, and a third in the stewardess' compartment from which she may call the passengers' attention to points of interest along the line. Each car of the train has two speaker units, one power amplifier and a rotary converter. The speakers are installed in the bulkheads at the ends of each coach and in the air-conditioning ducts of the other two cars.

In the buffet-lounge and the dining-observation cars the equipment in each car consists of a radio receiver mounted on a panel with tuning and volume controls, a control box including an output-level meter, an "in use" light, a three-position switch and a microphone.

Partial List of Materials and Equipment on the Cars of the B. & O.'s "Cincinnatian"

Aluminum	Aluminum Co. of America, Pittsburgh, Pa.
Alloy steel	Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Stainless steel	American Rolling Mill Co., Rustless Iron & Steel Division, Baltimore, Md. Charles T. Brandt, Inc., Baltimore, Md.
Truck frames, cast-steel	General Steel Castings Corp., Eddystone, Pa.
Springs	Crucible Steel Co. of America, New York
Axles	Standard Forgings Corp., Chicago
Wheels	Edgewater Steel Co., Pittsburgh, Pa.
Bearings and boxes	Hyatt Bearing Div., General Motors Corp., Harrison, N. J.
Couplers	National Malleable & Steel Castings Co., Cleveland, Ohio
Draft gear	W. H. Miner, Inc., Chicago
Sound-deadening pads	Fabreeka Products Co., Boston, Mass.
Oilite bushings	Amplex Div., Chrysler Corp., Detroit, Mich.
Air brakes	Westinghouse Air Brake Co., Wilmerding, Pa.
Clasp brakes	American Steel Foundries, Chicago
Hand brakes	National Brake Co., Inc., Buffalo, N. Y. Pullman-Standard Car Mfg. Co., Chicago
Trap doors and folding steps	O. M. Edwards Co., Syracuse, New York
Vestibule side doors and body end doors	Haskelite Mfg. Co., Chicago
Diaphragm	Adams & Westlake Co., Elkhart, Ind.
Insulation	Gustin-Bacon Mfg. Co., Kansas City, Mo. J. W. Mortell Co., Kankakee, Ill.
Floor composition	Tuco Products Corp., New York
Floor covering:	
Linotyle	Armstrong Cork Co., Lancaster, Pa.
Carpet	Calvert Rug & Linoleum Co., Baltimore, Md.
Ceramic tile	Sparta Ceramic Co., Sparta, Ohio
Coach seats	Heywood-Wakefield Co., Gardner, Mass.
Chairs, settees and furniture	General Fireproofing Co., Youngstown, Ohio
Tables for lounge cars	National Store Fixtures Co., Baltimore, Md.
Coach seat covering	Goodall Fabrics, New York
Chairs and settee covering:	
Leather (Ashtabula Hide & Leather Co.; Cleveland Tanning Co.)	Ray W. Preikschat, Chicago
Fabric	Massachusetts Mohair Plush Co., Boston, Mass.
Sash and glass	Adams & Westlake Co., Elkhart, Ind.
Plastic window capping	Bettendorf Co., Bettendorf, Iowa
Venetian blinds	Ajax-Consolidated Co., Chicago
Drapery material	Goodall Co., Cincinnati, Ohio
Translucent glass windows	Pressed Prism Plate Glass Co., Chicago
Snap-on molding	Marsh Wall Products, Inc., Dover, Ohio
Table tops	Formica Insulation Co., Cincinnati, Ohio National Store Fixture Co., Baltimore, Md.
Interior finish	Marsh Wall Products, Inc., Dover, Ohio Masonite Corp., Chicago
Parcel racks	Adams & Westlake Co., Elkhart, Ind.
Hand holds, side door, stainless	Pullman-Standard Car Mfg. Co., Chicago
Baggage side door hangers	Midland Co., South Milwaukee, Wis.
Kitchen range	Stearnes Co., Chicago
Hardware	Corbin Cabinet Lock Div., American Hardware Co., New Britain, Conn Pullman-Standard Car Mfg. Co., Chicago
Drinking-water coolers: (Cordley & Hayes)	E. A. Lundy Co., New York
Paper cup dispensers	Dixie-Vortex Co., Chicago
Batteries	Edison Storage Battery Div., Thomas A. Edison, Inc., West Orange, N. J. Electric Storage Battery Co., Philadelphia, Pa. Gould Storage Battery Co., Depew, N. Y. K. W. Battery Co., Brooklyn, N. Y.
Charging receptacles and train line connectors	Pyle-National Co., Chicago
Lighting fixtures	Safety Car Heating & Lighting Co., New York
Generators, 7½-kw.	Fairbanks, Morse & Co., Chicago
Generator pulleys	Worthington Pump & Machinery Corp., Harrison, N. J.
Axle pulleys	American Pulley Co., Philadelphia, Pa.
V-belts	Dayton Rubber Mfg. Co., Dayton, Ohio
Flat belts	United States Rubber Co., New York
Air-conditioning system	York Corporation, York, Pa.
Steam-heat specialties and controls	Vapor Car Heating Co., Chicago
Longitudinal Aerofuse duct outlets: (Tuttle & Bailey, Inc.)	E. A. Lundy Co., New York
Air filters	American Air Filter Co., Louisville, Ky.
Radio receivers	Hallicrafters Co., Chicago
Amplifiers, speakers and microphones	Stromberg-Carlson Co., Rochester, N. Y.
Radio antenna	American Phenolic Corp., Chicago
Annunciators	Edwards Mfg. Co., Cincinnati, Ohio
Radio and public-address train line connectors	Mines Equipment Co., St. Louis, Mo.
Wash stands	Crane Co., Chicago
Hoppers	Dayton Mfg. Co., Dayton, Ohio
Copper tubing, sheets and fittings	Revere Copper & Brass, Inc., New York
Uni-flo grilles	Barber-Colman Co., Rockford, Ill.
Kass type safety treads	Morton Mfg. Co., Chicago
Shakeproof screws	Shakeproof, Inc., Chicago
Towel cabinets	U. S. Paper Mills, Chambersburg, Pa.
Marker lamps	Pyle-National Co., Chicago
Bandoblue enamel	E. I. du Pont de Nemours & Co., Wilmington, Del.
Aluminum letters	Pittsburgh Stamp Co., Pittsburgh, Pa.

Left—The cars have six-wheel roller-bearing trucks. Below—Batteries of 1,000 amp.-hr. capacity are used



When the switch in either car is in normal position, radio programs are reproduced over the amplifier and speakers in that particular car. When the switch is in a locking position the programs are distributed throughout the entire train. If the switch is moved to the non-locking position, announcements can be made to the entire train.

The conductor's desk is furnished with a control box, microphone and a monitor speaker. When the switch is in the non-locking position the conductor can make announcements to the entire train, automatically cutting off radio programs being transmitted. The stewardess' room is fitted with the same facilities as those located at the conductor's desk.

Transmission throughout the train is accomplished over four wire conductors. Two carry the signal and the other two are used for relay control purposes. Use of the level meter insures satisfactory volume conditions. Each radio is operated from train antennas located on the top of that car in which the receiver is located.

The radio receivers were made by the Hallicrafters Company. The sound system is a product of the Stromberg-Carlson Co.

The Train Telephone

The telephone system for the crew has five stations. One is at the rear of the observation car; one is at the forward end of the same car; two are in the baggage-buffet-lounge car, one of these being at the conductor's office and one in the crew's quarters, and a fifth station is crew's quarters, and a fifth station is located at the engineman's side in the locomotive cab. The system is a party-line arrangement with the signaling accomplished by bells operated by a hold-down switch at each station. The telephone wiring is incorporated with that for the sound system, four wires being allocated to the public-address system and two to the telephone.

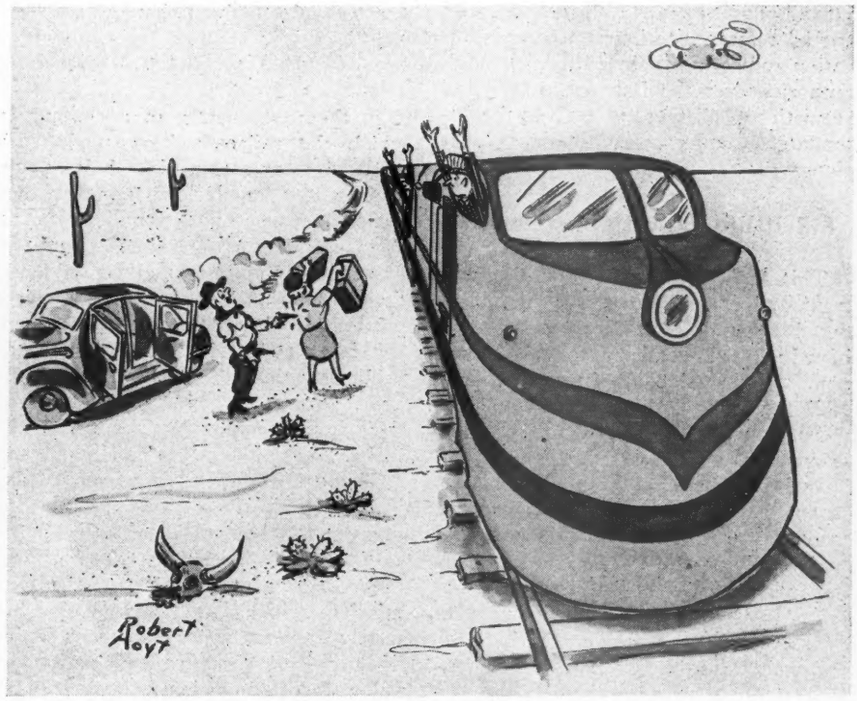
Each car is equipped with two 7½-kw. axle-driven generators and batteries of 1,000-amp.-hr. capacity. Two 1,200-watt capacity motor-alternators are located under the baggage-buffet-lounge and diner-observation cars and one of 1,200-watt capacity in each of the coaches to furnish 110-volt current for fluorescent lighting. One 225-watt rotary converter under each car furnishes the current for the radio and public-address system.

Lighting and Air Conditioning

In addition to the fluorescent lighting the cars have 25-watt incandescent lamps located in the fluorescent troughs for night and emergency lighting. The individual seat lights have both a 15-watt incandescent bulb for night lighting and a 25-watt light bulb for the purpose of reading.

All cars have B. & O.-York air-conditioning systems of five tons refrigeration capacity. The conditioned air is distributed through ducts running down the center of each car ceiling. The heating is by means of the Vapor Car Heating Company's Vapa cycle-modulation zone-control equipment which includes fin-type radiation units and thermostats and humidistats permitting the modulated control of the air conditioning. Every air outlet is equipped with an exhaust fan.

* * *



"Sorry to hold you up, Pardner, but my mother-in-law is in a hurry to get back home."

Railroads Must Have a 6 Per Cent Return

Earnings on that basis are necessary to insure continued investment in improved facilities to provide adequate rail transportation without which the country can neither wage war nor carry on business successfully

By R. V. FLETCHER
President, Association of American Railroads

THIS country can neither wage war nor carry on business successfully without adequate rail transportation. The only way to have such transportation is through continued investment in improved rail facilities. The only way to insure this needed investment in the future is to allow railroads to earn not less than 6 per cent on what is already invested in their properties. Six per cent is approximately double the rate which railroads are expected to earn in 1947. The railroads must, therefore, seek a return commensurate with the earnings of other industries, and sufficient to insure adequate transportation in the future.

These are the basic conclusions of a report on railroad finance made by the Bureau of Railway Economics for the Railroad Committee for the Study of Transportation, a research group of the Association of American Railroads. The member railroads of the association agree with these conclusions, and have determined to do their utmost to carry them into effect, in the interest of their investors and of the public.

This report, the result of three years' study, goes exhaustively and in detail into all phases of railroad financing, with special reference to investment, capitalization and earnings since 1920, when full authority over the issuance of railroad securities of all types was given the Interstate Commerce Commission by Congress.

$13 Billion for Improvements

This A. A. R. study of railroad investment and earnings over the past three decades reveals little-known facts, some of which are contrary to widespread popular impression. It shows that since 1921 the railroads have spent a total of more than $13,000,000,000 on such improvements as new and better cars and locomotives, better tracks and terminals, better shops and signals, and other improvements. For every dollar paid out in dividends in these years, the railroads have put two dollars back into the properties in improvements. Such improvements, which are wanted and which the railroads want to make, can be continued in the future only if railroads are able to earn a fair and adequate return on the investment necessary to create them.

The report shows that at the same time the railroads have greatly reduced the outstanding indebtedness in the hands of the public. During the early years of the great improvement program which the railroads inaugurated in the 1920's, there was an increase of approximately 1¾ billion dollars in railroad indebtedness. Since 1932, however, railroad indebtedness has been reduced by approximately 3 billion dollars. Of this amount, only about one-fourth was retired through processes of reorganization, while three-fourths was paid off.

The whole story is one of prudent and careful financial managemennt of the resources and earnings of the railroad industry as a whole. Nevertheless, the rate of return earned by the railroads upon the sums invested in them has been, through the years, so low as to make it difficult, and in many cases impossible, to carry forward improvements of the sort which have proved themselves of the greatest value to the nation.

Costs Up, Rates Down

In the past quarter of a century in which the railroads have made such great improvements in their plant, equipment and operations, the wages they pay have gone up more than 80 per cent, the prices they pay for supplies and fuel have gone up more than 50 per cent, and their tax burden has gone up in like proportion. In the same years, the passenger fares and freight rates which the public pays the railroads have gone down, and the return earned by the railroads on their investment has been cut virtually in half.

The total investment in railroads today is more than $28,000,000,000. The net investment, after deducting the depreciation accrued, is more than $23,000,000,000. The Interstate Commerce Commission, which has been engaged for nearly 35 years in a complete valuation of the railroads, has recently assigned a value, for rate-making purposes, of all railroads well above 20 billion dollars. This value was based on unit prices of materials and supplies which prevailed more than a decade ago, in the depths of the depression. Allowing for the price increases since the period 1932-1936, it would seem that this valuation would be not far from the 23 billion-dollar figure for depreciated, or net investment.

On their depreciated investment the railroads as a whole have earned, during the past 25 years, a rate of return averaging only about 3¼ per cent. Even on the Interstate Commerce Commission valuation, based on depression prices, the return earned by the railroads was well under 4 per cent. And this, it should be borne in mind, was the average return for a period which included both the boom decade of the 1920's and the five years of the Second World War, when railroads performed their greatest service and collected their greatest revenues.

Volume High, Return Low

In 1946, when the railroads handled the heaviest peace-time traffic in their history, they earned only 2¾ per cent on their depreciated investment and less than 3¼ per cent on the Interstate Commerce Commission valuation. And out of this meager return they had to meet the interest, rents and other fixed charges due, pay dividends, and finance improvements.

With the beginning of 1947, the railroads were authorized to increase freight rates to meet to some extent the increases in wages and prices of materials and fuel which they have had to pay since 1939. But even with the increased rates, it is not likely that in 1947 the railroads will earn more than 3 per cent on net investment or 3½ per cent on Interstate Commerce Commission valuation. Continuation of so low a return of earnings, even with business at high volume, raises serious questions for the railroads and the country.

The public wants improved railroad service, and the railroads are anxious to supply it. In the months since the close of hostilities the railroads have ordered more than twice as many new freight cars as they have been able to get. They have ordered as many new passenger cars as were bought in the ten years just before the war. They plan further improvements in their tracks, stations, yards and terminals, signals and communications, and other fixed facilities. Such improvements,

however, call for further large investments in railroads.

To make such investments with borrowed funds is neither desirable nor, in many cases, possible, the A. A. R. financial report shows. Still less is it feasible or possible, on the basis of the present level of earnings, to finance such improvements to any extent from the sale of stock. The only way in which the country can secure and enjoy major railroad improvements is to give railroads a chance to make such earnings as will enable them to finance the necessary investment in improved facilities either out of earnings or out of credit which the earnings will support. A striking fact developed in the A. A. R. financial report is the close correlation between the earnings of railroads and their expenditures for improved plant and equipment.

Others Fare Much Better

In comparison with the rate of return earned on capital invested in railroads, the return on capital invested in manufacturing and other general lines of business is about two and one-half times as much, and the return on capital invested in other regulated industries such as telephone companies and electric utilities is about twice as much as for the railroads.

The rate of return earned by the railroads also is only about half of what the Supreme Court of the United States has repeatedly held to be a fair and reasonable rate of return for regulated utilities. As lately as 1942 and 1944 the court has held that earnings of 6½ per cent on the rate base of a public utility were no more than was fair and reasonable. In the 1944 case (*Federal Power Commission* vs. *Hope Natural Gas Co.*), after pointing out that there must be enough revenue not only for operating expenses but also for the capital costs of the business, the court said: "These include service on the debt and dividends on the stock. . . . By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital." The percentage of return which the Supreme Court approved in this and other cases is about twice that which the railroads are expected to earn in 1947, even with the new rates in effect and with the high volume of traffic anticipated.

If the railroads are to continue for long their program of improvements they must, as the Supreme Court has said, have a return "sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital." That means a rate of return which will average for the railroads as a whole, and over a period of years, not less than 6 per cent return which is as little as almost anyone would consider a reasonable profit in a business such as that of the railroads.

It is the recommendation of this considered study of railroad investment and earnings, therefore, that the future of the railroad business in the United States and the country's stake in adequate and efficient rail transport, depend upon the railroads being allowed to earn an average return of at least 6 per cent, in keeping with the return earned on capital invested in other enterprises.

In the final analysis, what railroads are permitted to earn is a question to be determined by the public authorities which regulate transportation and by the public which the railroads serve.

Railroad earnings all remain in the stream of business and economic activity. The greater part of what railroads take in is immediately paid out in wages, both to those who work for the railroads directly and those who work at making the 100,000 different sorts of things which railroads buy and use. A large part is paid in taxes, spent for the general public service and benefit in cities, counties and states all over the Union. A small portion goes to service the obligations of the railroads so largely held by insurance companies and other trustees of public funds as well as by individual investors. And this money, too, continues to flow in the main stream of business. Another portion of railroad earnings, provided that earnings are adequate, is spent for the improvements in transportation which not only represent additions to purchasing power but make possible better service at lower real cost.

All in all, no better investment can be made in the future of agriculture, industry and commerce in the United States, than rail earnings which make possible continued investment in more adequate and more efficient railroads.

Clark "Pul-Pac" Method

A method of simplified material handling by means of a newly developed "Pul-Pac" attachment for Clark fork-lift trucks, used in conjunction with unit loads mounted on disposable carrier sheets of corrugated fibre board, in place of conventional wood or metal pallets, has been announced by the Clark Tructractor Division of Clark Equipment Company, Battle Creek, Mich.

The new attachment consists of a flat steel plate, in place of the usual forks, and is used, with an inexpensive load base of paper or other material, to receive, lift and carry unit loads. Forming a part of the new attachment, a hydraulically-actuated gripper device moves forward, clamps an extending margin of the carrier sheet, and pulls both sheet and load onto the plate. At destination the load is lifted and registered directly over the area onto which it is to be deposited, while a pusher device, working against the load, is said to deposit both carrier sheet and cargo in the desired position as the backing truck withdraws the carrier plate.

A Clark truck equipped with "Pul-Pac" attachment. Note disposable carrier sheets

Planes Gained Top-Rate Travel as Railway Net Dived

I. C. C. "Monthly Comment" shows growth of competition in 1946; financial results analyzed; traffic data reflect many post-war changes

DOMESTIC air lines handled 22 per cent of the combined air and first-class railroad passenger business during the first 10 months of 1946, their relative position in that field thus becoming nearly 100 per cent better than in the comparable 1945 period when they handled 11.2 per cent of the business. This is pointed up by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics in the latest issue of its "Monthly Comment," which includes an analysis of figures showing that the revenue passenger-miles of the air lines, during last year's first 10 months, were 80.7 per cent above those of 1945's January-October period, while railroad parlor and sleeping-car traffic declined 19.6 per cent.

During the 1946 period under review, the air lines reported 4,971 million revenue passenger-miles and the railroads reported 17,606 million passenger-miles for travelers in parlor and sleeping cars. The comparable 1945 figures were, respectively, 2,751 million and 21,908 million. For the full year 1945, the air lines handled 11.5 per cent of the total business. The bureau's calculations are carried back to 1938 when the air lines' proportion was 6.1 per cent. It thereafter rose to 13.1 per cent in 1941, but fell off during the war years to 7.4 per cent in 1942, 6.2 per cent in 1943, and 7.8 per cent in 1944.

1946 Financial Results

Before getting into the foregoing, the bureau had made the usual analysis of latest railway financial returns, this time for the entire year 1946. There it is pointed out that the reported $619 million in net railway operating income for last year was realized only after federal income tax credits in the amount of $170 million had been taken. As a result, the total 1946 federal income tax figures for Class I roads as a whole reflect a $15.3 million credit—"a very unusual development," as the "Comment" puts it. At the same time, it calls attention to the fact that the reported 1945 net railway operating income of $849 million was reduced by $160 million as the result of "extraordinary charges" to operating expenses for accelerated amortization of defense projects and concurrent tax credits. With these "unusual accounting adjustments" eliminated, the bureau calculates that the 1946 net railway operating income would have been $448.8 million, down 55.5 per cent from the similarly-adjusted 1945 figure of $1,009 million. The comparison of the reported and adjusted figures by districts and regions is shown in the accompanying table.

On the basis of reported figures, the net income for 1946 was estimated at $280 million when the bureau's analysis was prepared. This would be 37.4 per cent below the 1945 net income of $447 million. With the "unusual accounting adjustments" eliminated, these figures become $110 million and $607 million, respectively, a drop of 81.9 per cent. Another tabulation sets up 1936, 1941, and 1946 ratios of reported net railway operating income to operating revenues, the bureau suggesting that this index is "useful as a measure of railway earnings over a series of years because it is based primarily on operating results, without regard to the effect of federal income taxes." It shows that the 1946 net railway operating income of the Class I roads as a whole was only 7.9 per cent of the operating revenues, as compared with 21.9 per cent in 1941 and 17.2 per cent in 1936. Reading the figures by districts and regions, the bureau notes that the ratios "dropped sharply" in each district or region in 1946 as compared with 1941; and it calls the Eastern-district decline from 19.9 per cent to 3.1 per cent "particularly precipitous."

CLASS I STEAM RAILWAYS

Net railway operating income, years 1946-1945

District or region	As reported		Per cent of change	Adjusted to eliminate unusual items		Per cent of change
	1946	1945		1946	1945	
	Thousands			Thousands		
Eastern district	$146,145	$287,139	−49.1	$ 66,640	$ 343,241	−80.6
Pocahontas region	62,457	52,958	+17.9	60,192	67,418	−10.7
Southern region	92,623	118,121	−21.6	74,278	135,527	−45.2
Western district	318,060	391,010	−18.7	247,684	463,060	−46.5
Total	$619,285	$849,228	−27.1	$448,794	$1,009,246	−55.5

Rates of Return

Continuing along the reported-vs.-adjusted line, the "Comment" also sets out 1946 and 1945 rates of return on that basis. For property values it uses those employed by the commission in its December 6, 1946, report in the Ex Parte 162 rate advance case. The reported 1946 net is thus shown to have been a return of 3.16 per cent as compared with 4.33 per cent for 1945, while the respective figures are 2.29 per cent and 5.16 per cent on the basis of the restated net.

The December figures show that the operating ratio for that month was 86.3 per cent, as compared with the December, 1945, figure of 157.5 per cent; but if the amortization of defense projects is excluded from the expenses the December, 1946, figure becomes 86.2 and the December, 1945, figure 92.7. The December, 1946, freight revenue index (based on the 1935-1939 monthly average as 100) was 189.9 as compared with November's 201.2 and December, 1945's 154.4. The passenger revenue index was 264.7 as compared with November's 252.3 and December, 1945's 460.1.

The bureau's comparison of freight tonnage and ton-mile figures shows that for each month of the August-November period, the per cent of increase in the number of tons of freight carried in 1946 over 1945 regularly exceeded the corresponding percentages for ton-miles, "indicating the decreased average length of haul." The average haul per revenue ton per road dropped from 230.4 miles in September, 1945, to 218.3 miles in the same month of 1946, and the corresponding figures for November were 226.5 miles and 221.9 miles. The average journey per passenger per road was 109.6 miles in November, 1945, and 69.8 miles in November, 1946.

Data derived from Association of American Railroads carloading reports to show the average number of roads handling the average carload of freight in 1939, 1944, 1945, and 1946 are plotted on a chart which appears in the "Comment." The average number of participating roads was above 2 (but not as high as 2.1) in three 1944 months—February, March, and December; and in two 1945 months—February and March. The 1939 curve did not get as high as 1.75, while the 1946 curve reached its peak when it crossed the 1.9 line in February. "In view of the large

amount of local traffic, originating and terminating on line," the bureau explains, "the average number of carriers handling the interline traffic must be relatively high to raise the overall ratio close to *two*."

Figures presented on railroads in the hands of the courts during the 1895-1947 period show that the peak mileage (77,013) was thus involved in 1939. This had declined to 30,257 miles as of January 15, 1947. The smallest number of miles operated by receivers or trustees, as shown by the figures, which are by five-year intervals, was the 796 miles involved in 1905. The average number of miles in the hands of the courts for all years of the 1895-1947 period is shown as 25,956.

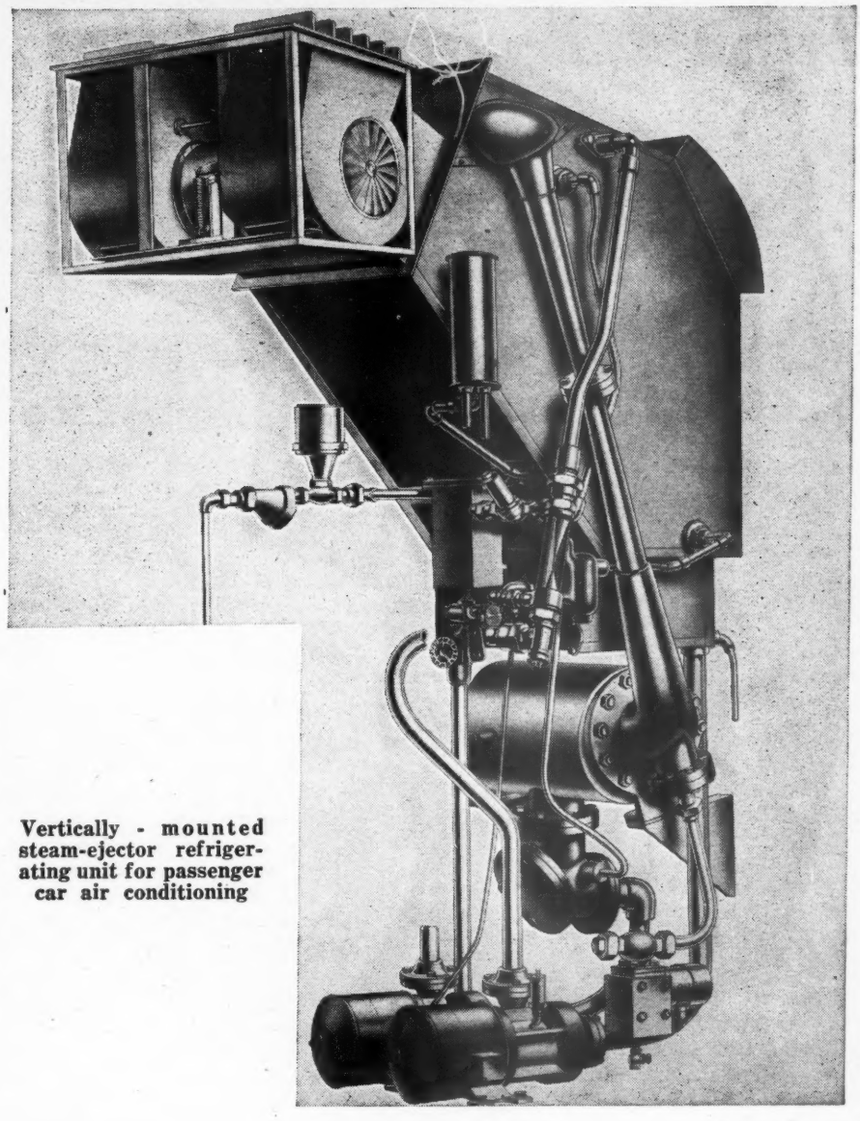
Large Overtime Payments

Commenting on overtime payments to employees, the bureau points out that the "partly estimated" total for the first 11 months of 1946 was $332,886,669 or 8.75 per cent of the total compensation paid. The comparable 1945 figure was $469,975,690 or 13.25 per cent. In 1939 these overtime payments averaged only 3.44 per cent of total compensation.

Other tabulations in the "Comment" include those comparing the war-time experience of the United States and Mexican railroads. On the basis of 1938 as 100 the 1943 index of operating revenues was 254 in U. S. and 174.9 in Mexico. Meanwhile the operating ratio in Mexico fell only 1.4 points, from 1938's 93.7 to 1943's 92.3, while that of United States roads dropped 13.9 points —from 76.4 to 62.5.

The number of railway passengers carried in the United States in 1943 was 25 times as great as the number carried in Mexico, while the number of tons of freight hauled was 134 times as great. In 1942, the latest year for which Mexican population figures are available, the railways there carried 1.54 passengers and 0.9 tons of freight per person of population. The 1942 utilization of railways in the United States was 4.99 passengers and 21.88 tons of freight per person. The largest class of 1943 freight traffic in both countries was products of mines—54.4 per cent of the total in U. S. and 43 per cent in Mexico.

The composition of 1943 operating expenses in U. S. and Mexico, respectively, was as follows: Maintenance of way and structures, 19.59 per cent and 18.49 per cent; maintenance of equipment, 25.46 per cent and 28.87 per cent; traffic and transportation, 49.76 per cent and 42.9 per cent; general, 3.3 per cent and 9.74 per cent. The Mexican figures include no "miscellaneous" item which accounted for 1.89 per cent of U. S. railway expenses in 1943.



Vertically - mounted steam-ejector refrigerating unit for passenger car air conditioning

Refrigerating Unit Mounted Inside Car

A new steam ejector refrigerating unit for passenger car air conditioning, has been developed by the Safety Car Heating & Lighting Co., New Haven, Conn. It is arranged for interior car mounting and was designed for the Chicago, Milwaukee, St. Paul & Pacific. This equipment is arranged to be accommodated in a space 3 ft. 4 in. transverse of the car and 3 ft. 3 in. lengthwise of the car. The condenser and its casings are mounted in the upper portion of this space and the two pumps are mounted in the car floor. Condenser air is taken in through louvers and a screen where the roof meets the car side, and then passes through the condenser and a duct to the fan and motor assembly; this assembly is mounted on a plate which joins the roof hatch so that when this is lifted, the entire assembly is removed as a unit. The air outlet dampers are the same as those used with the standard overhead steam ejector refrigerating unit.

The motor-operated steam valve and the steam separator and reducing valves are mounted in the compartment. The sump of the condenser casing is equipped with a flushing device arranged so that a hose connection can be made outside of the car for flushing the dirt from the sump. The condenser may be removed through a hatch in the roof.

This arrangement has several advantages. All of the equipment is within the car where it is protected from dirt and damage. As all of the elements are inside of the car, they can be easily inspected and minor adjustments made from inside while the car is en route. Another important advantage is the fact that condenser air taken in at the roof level is far cleaner than air which passes through the underframe unit. This should reduce the labor of servicing and cleaning the condensers.

The weight of the unit is approximately 2,300 lb., and the steam consumption is 230 lb. per hour.

Tunnel Trouble and How to Correct It

Improper design and construction, poor drainage and other factors cause many failures — Recent work on the Pittsburg & Shawmut provides practical suggestions for reconstruction methods

By W. W. MORRISON
Vice-President, Pittsburg & Shawmut

and

ELWIN E. SEELYE
Consulting Engineer, New York

A constant flow of constructive articles dealing with repairs to all types of structures appears in engineering literature today. Such information is both timely and of great value because, as the country grows older and more and more important structures have to pass the test of time, the problem of making repairs becomes increasingly important. It is feared that only a few structures will pass this critical test as well as the Brooklyn bridge.

While descriptions of repair methods used in individual cases are useful, they become more significant if the discussions are analytical as to the cause of the failure and the reasons for using the particular methods of making repairs. With this thought in mind, the authors have prepared this article on the repair of concrete linings in railroad tunnels in general and recent work of this nature done on the Pittsburg & Shawmut in particular.

THE OBSERVED causes of the disintegration of tunnel linings fall into two classes, as follows:

(1) Structural failures, such as the cracking of an arch due to a lack of skewback support.

(2) Concrete failures, due to inferior materials or poor concreting operations, leaving the concrete vulnerable to frost action, to the chemical reaction of ground water because of inadequate drainage, and to locomotive exhaust gases.

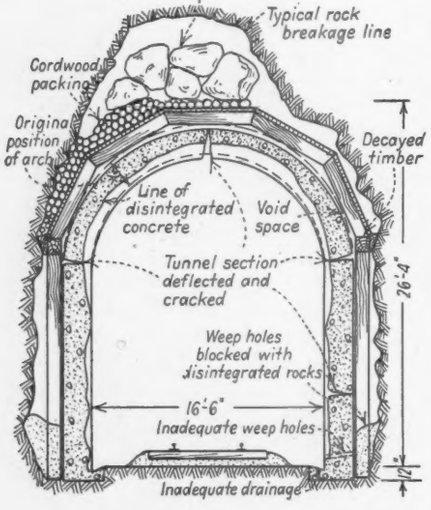


Fig. 1. Typical failures often encountered in concrete-lined tunnels, resulting from disintegration, errors in design and poor construction

One very common structural failure in concrete-lined tunnels seems to be due to the practice of applying a timber lining during construction, sheathed inside and outside as shown in Fig. 1. The inside sheathing later became the outside form for a concrete lining and the outside sheathing became the support for the backfilling or packing, which was placed between the breakage line and the tunnel timber. The backfilling and packing frequently consisted of rock spalls and earth, but in many cases cordwood was used.

The permanence of the void space between the concrete and the packing depended upon the life of the timber. When the timber decayed, in the course of one to three decades, the concrete arch became more or less unsupported at its springing lines, often resulting in the overstressing of the concrete at these locations and the cracking and disintegration of the crown, side walls and other points in the lining. A heavy rock fall often loaded the arch eccentrically and when this occurred, and the timber had rotted away, the lateral support so necessary for the arch was lacking.

The practice of constructing concrete tunnels built against wood timbering, which provided adequate skewback reaction only temporarily, came about from following certain authorities blindly.

Corrective Measures

A number of methods have been developed to overcome the displacement of the concrete lining which tends to occur where the timber has decayed. One method is to cut "windows" in the side walls and build "thrust blocks," providing solid bearings against the sides of the excavation, as shown in Fig. 3. Even when the thrust blocks are introduced, the arch above may require some additional strengthening, such as supports above the springing line.

Another structural weakness, often found in existing tunnels, results from constructing the portal wall at right angles to the axis of the tunnel, as illustrated by Fig. 2, instead of providing wing walls. The slopes in the vicinity of the portals, particularly in coal strata where there is an abundance of clay, are often subject to circular slides which may undermine the face walls or subject them to considerable overburden, often causing their failure or complete collapse.

Fig. 2. Failure of this portal wall was caused by the action of earth slides, combined with poor design and inferior concrete

The use of an inexpensive, yet effective, head-wall design, incorporating wing walls parallel with the track, will be found suitable at many tunnels where failure of the portal wall is imminent. A typical example of such a design is shown in Fig. 4. In this design the wing wall has two primary functions: (1) To act as a buttress for the head wall, and (2) to act as a retaining wall for material thrusting against it from a lateral direction. If the old head wall requires complete renewal, this method of reinforcing eliminates the necessity of cutting back into the side slopes of

the approach cut to obtain space for a full retaining-wall section. Moreover, the excavation required will frequently be less than that required for wing walls built at an angle to the tracks.

If the approach to the tunnel is not in a deep cut, wing walls set at an angle to the center line of the track would be indicated, and where the approach cut is in rock, with the overburden consisting of the same material, a 90-deg. wing wall would be most economical.

Disintegration of Concrete

Excessive concrete disintegration is noticeable in many tunnels, but the cause of this type of failure is difficult to diagnose. It may often be attributed to inferior work in concreting, involving not only the common errors of using defective aggregates, a non-uniform mix or an excess of water, but also the use of poor placement methods at the more difficult locations, such as at the crown of the arch.

Other concrete disintegration may result from acid conditions in water which is often trapped behind the walls when these are built directly against the rock of the bore. The remedy for this type of failure is better concrete and better drainage. That the effect of freezing and thawing must be also taken into account is evidenced by observations made by W. P. Geiser, chief engineer of the Pittsburg & Shawmut, who determined the temperatures in the center of a 2,000-ft. tunnel during the winter months and found them to be only 10 deg to 20 deg. above the outside temperature, depending on how frequently the outside air was carried into the tunnel by passing trains. An example of the conditions caused by freezing in a tunnel is given in Fig. 5.

Theoretically, the precautions to be taken to avoid concrete disintegration in new construction would be as follows:

(1) Grade the aggregates carefully and provide careful workmanship in placing the concrete, particularly at the closure. A segment of the closure concrete might well be left open and later filled with shotcrete or brickwork.

(2) The concrete should be made with a sulphate-resisting cement, such as ASTM Types II or V.

(3) The drainage should be such as to prevent the trapping of water against the rear side of the lining. Adequate track ditches, so designed that they would not become blocked up or frozen, and large and numerous weep holes, as shown in Fig. 3, are necessary aspects of a good drainage system.

In the reconstruction of these old tunnels several requirements should be kept in mind:

First, to preserve what integrity still remains in the tunnel arches and walls, it is necessary to construct thrust blocks at close intervals to support the arch reactions at the springing line.

Second, where the vertical supporting walls are badly disintegrated or entirely gone, these walls may be replaced section by section, similar to the manner in which a building wall is underpinned. An example of this underpinning is shown in Fig. 6.

Third, the walls and arches may be cut out in sections, either entirely or in part, and replaced with new masonry, either concrete or brick. The convenience of laying brick in these sections has a strong appeal, particularly when it is recalled that a good vitrified brick

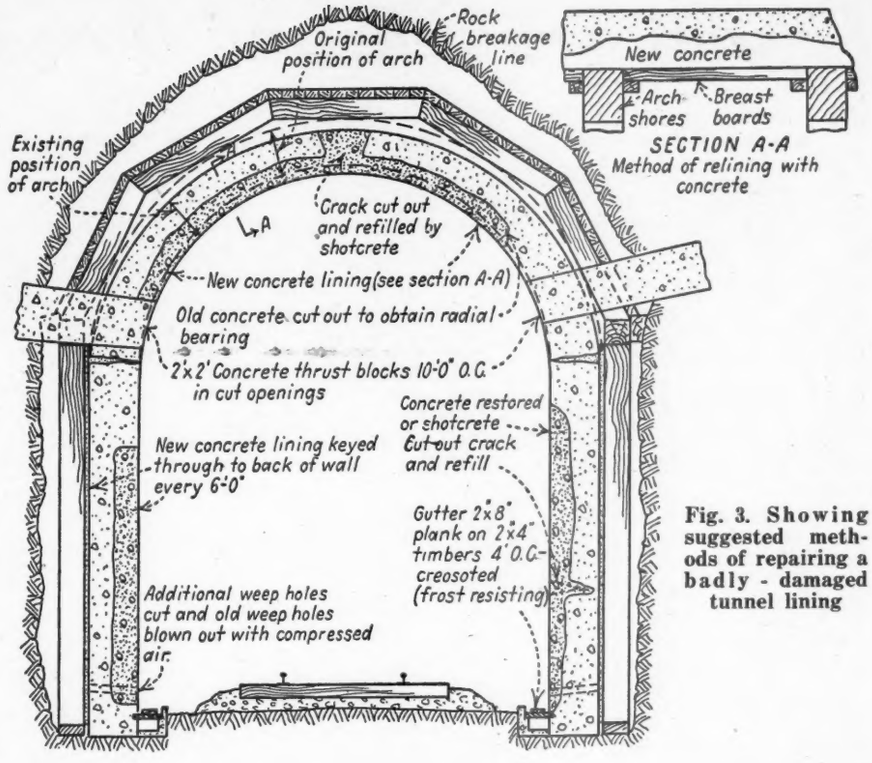

Rock breakage line
Original position of arch
New concrete
Arch shores
Breast boards
SECTION A-A
Method of relining with concrete
Existing position of arch
A
Crack cut out and refilled by shotcrete
New concrete lining (see section A-A)
Old concrete cut out to obtain radial bearing
2'x2' Concrete thrust blocks 10'-0" O.C. in cut openings
Concrete restored or shotcrete
Cut out crack and refill
New concrete lining keyed through to back of wall every 6'-0"
Gutter 2"x8" plank on 2"x4" timbers 4' O.C. creosoted (frost resisting)
Additional weep holes cut and old weep holes blown out with compressed air

Fig. 3. Showing suggested methods of repairing a badly - damaged tunnel lining

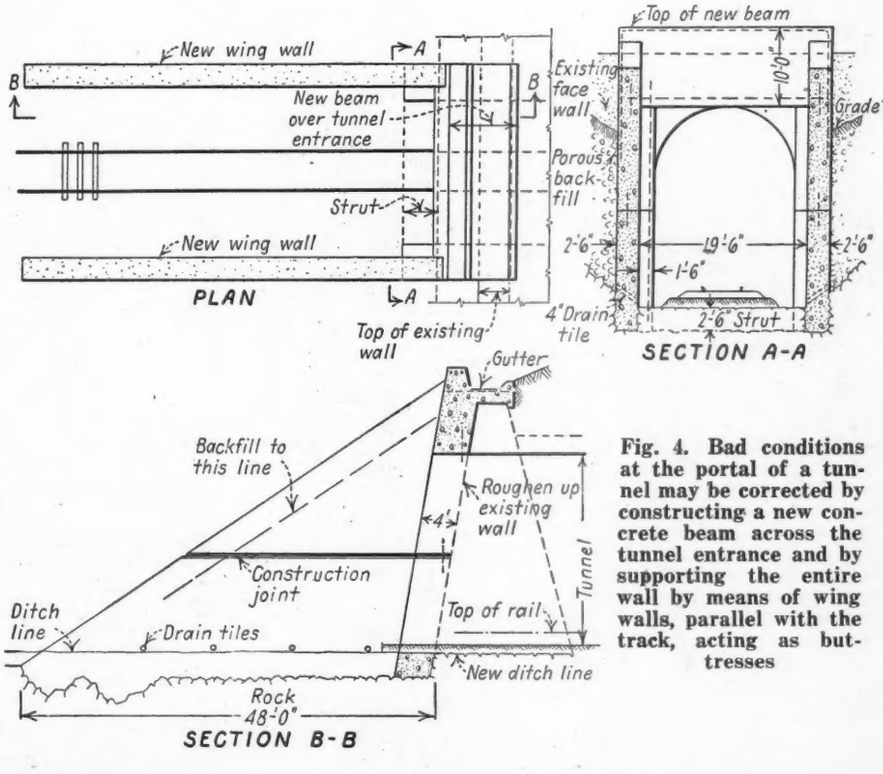
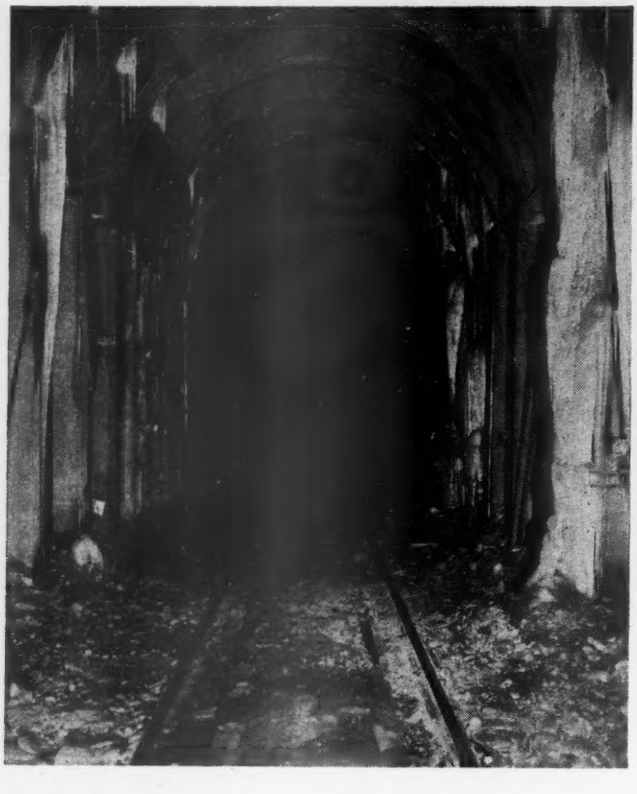
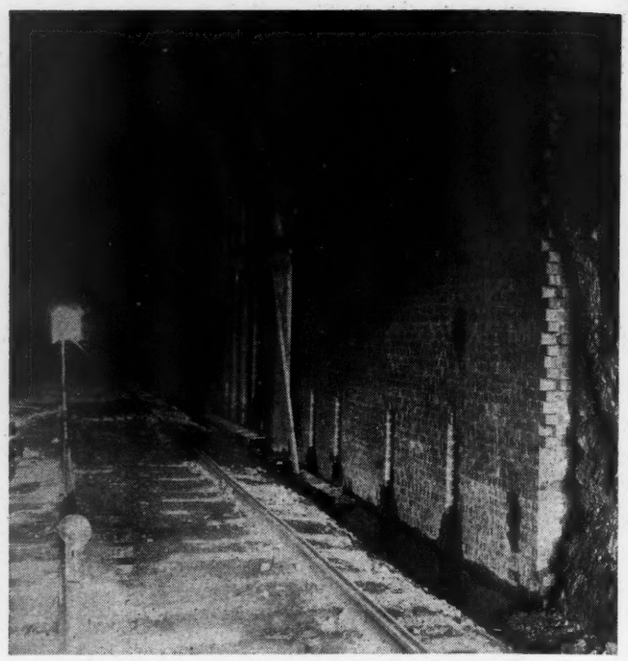


Fig. 4. Bad conditions at the portal of a tunnel may be corrected by constructing a new concrete beam across the tunnel entrance and by supporting the entire wall by means of wing walls, parallel with the track, acting as buttresses





Left—Fig. 5. An example of ice conditions in a tunnel, nearly 500 ft. from the nearest portal. Above—Fig. 6. Replacing a tunnel wall with brickwork. Note the effective drainage as indicated by the weep holes.

will not disintegrate under mild acid action. If the reconstructed arch is to be of brick, it should be parged or coated with a waterproof cement at the top or outside of the ring. A mastic substance could well be used for this purpose.

There are good reasons for believing that concrete reconstruction is cheaper than the use of brick. A concrete-mixing plant and a scaffold may be mounted on cars and used very successfully for placing the concrete. Both concrete and brick reconstruction require the use of centering that must clear traffic, and this means a timber-arch type of centering with horizontal breast boards between.

The arch of the tunnel lining may often be subject to flexure, due to the uncertainty of packing or loading and to the inequality of breakage lines. This means that the arch should have some tangential strength, and this strength can be provided if the brick is laid tangentially instead of longitudinally. This method will produce a strength in the arch several times greater than that to be found when the brick is laid longitudinally in the usual manner.

There are other methods of reconstructing partially-failed tunnels, of which two deserve mention. The use of steel plates, backed with concrete and surfaced with shotcrete, is one, and the pumping of grout behind the concrete lining is another. Both can be used but neither is favored by the authors because the first introduces steel, which is subject to corrosion, and the second is "blind" grouting which can easily be futile and extravagant.

While the cost of reconstructing a tunnel varies widely, an average for a typical single-track tunnel would be about $300 per lin. ft. However, it was discovered that, by employing the methods indicated in this article, the cost could be brought down to $150 per lin. ft., even if disintegration is advanced.

These methods were used in a recent project on the Pittsburg & Shawmut, where several tunnels were reconstructed using company forces. This work was carried out under the direction of W. W. Morrison, vice-president, and Mr. Geiser. Elwin E. Seelye & Co. were the construction engineers and were represented by Burnside R. Value. Patrick Murphy of the Seelye organization was in direct charge of the field work.

NEW BOOKS . . .

Big Dan, by Frank Cunningham, 339 pages, illustrated. Published by The Desert News Press, Salt Lake City, Utah. Price, $3.25.

This is the story of a railroader, Daniel G. "Big Dan" Cunningham, who once pitched an assistant foreman through a roundhouse window because he resented being cursed, yet walked two miles with a dejected supply firm salesman to vouch for his product and to secure for the salesman an order for a $38,000 air compressor. Thus the reader comes to know Big Dan, and to follow his career from plantation days in Bedford county, Va., through various railroad jobs until his retirement in 1943 as master mechanic of the Denver & Rio Grande Western, at Salt Lake City, Utah.

The author has dramatized in an interesting manner the events in Big Dan's life, which includes a wide range of incidents, from his near lynching by a group of angry railroad men to the time he assisted in preparation of a Hollywood motion picture production. This book is well seasoned with railroad history, sandwiched into the narrative whenever possible without slowing down the tale of Big Dan's career. Readers will find the discussion of railroading during the Civil War of particular interest.

Roadway and Track. By Walter F. Rench, 350 pages. Illustrated, 8¾ in. by 5¾ in. Bound in cloth. Published by the Simmons-Boardman Publishing Corporation, 30 Church street, New York. Price $5.

An authoritative manual on roadway and track maintenance, this book, now in its third edition, will not only be of benefit to maintenance men but will also provide a wealth of valuable information to transportation and operating officials whose duties require a working knowledge of the fundamentals of this important phase of railway work. The book is based on the

author's 25 years of service in the maintenance of way department of the Pennsylvania, and on an equally long period as editor and field representative of the Simmons-Boardman Publishing Corporation. It first appeared in 1921, and was followed by the second edition, published in 1923.

The current edition is considerably larger than its predecessors, having been broadened by the addition of a comprehensive discussion of the proper utilization of mechanical equipment, and by the insertion of a number of tables, both in the text and in the closing pages. In addition, to increase its value as a practical and timely manual, much of the original text has been carefully revised and brought up to date. Roadway and Track first discusses roadway, and under this heading, deals with the subject of the right-of-way, drainage, erosion control, roadbed stabilization, the economics of roadway machines, labor saving methods and devices and small tools. Next it deals with track, devoting attention to power machinery and labor saving methods, and the most effective practices in maintaining tracks, yards and terminals. Also considered in this section are track obstructions, materials and inspection. The final section of the book is given over to a discussion of the economics of track labor, the methods used in solving a number of special problems in maintenance work, and finally, the duties of supervisory and other employees in the maintenance of way department.

While most of the methods described are based on those in use on the Pennsylvania, the practices of other well-maintained roads are included, as well as the recommended practices of the American Railway Engineering Association.

COMMUNICATIONS...

Gas Turbine Background

MILWAUKEE, WIS.

TO THE EDITOR:

On page 341 of the February 8, 1947, issue of *Railway Age*, a statement was made that the construction of the oil-burning gas-turbine locomotive by the Baldwin Locomotive Works for the Atchison, Topeka & Santa Fe "will mark the first attempt to build such a locomotive for railroad use." This apparently is a statement of F. G. Gurley, president of the Santa Fe.

It is undoubtedly a great step forward in the matter of introducing gas-turbine locomotives to American railroads, but it is also true that the construction of this gas-turbine locomotive for the Santa Fe railroad is by no means the first attempt. As you undoubtedly know, two coal-burning gas-turbine locomotives, which present more difficult problems, were ordered by the Bituminous Coal Research Committee several months ago to be built by American manufacturers. Furthermore, the first gas-turbine locomotive that was ever used on any railroad was put into service in 1941. This locomotive has operated at least 100,000 service miles at present, on railways in Switzerland and France. A gas-turbine locomotive, of 2,500 hp., also for oil-burning, was ordered about four months ago by the Great Western Railway of England, and a gas-turbine locomotive, of which very little has been published, having a rating which has not been indicated as yet, is under construction in France. This locomotive is being built by the French Rateau and Alsthom Companies.

W. GIGER.
Transportation Industries,
Industrial Sales Department,
General Machinery Division,
Allis-Chalmers Manufacturing Co.

Moving Trains Out of Terminals in C. T. C.

SACRAMENTO, CAL.

TO THE EDITOR:

Your editorial in a recent issue of the *Railway Age* discussing a fact that centralized traffic control permits trains to be moved out of terminals when ready to go, is timely. The Western Pacific has centralized traffic control on 115 miles of single track in the famous scenic section of the Feather river canyon, and our experience with the operation of trains on this territory amply proves the point discussed in your editorial. A consideration of importance, however, is that the first siding from a terminal should be so located that a freight train can make a move from the yard to that siding in short time. For example, the distance from Portola yard west to the first siding at Mabie, is comparatively short. Therefore, when a westbound train is ready to depart and the C. T. C. illuminated track diagram shows that at least 15 min. is available, the dispatcher clears the signal for the train to depart from the yard and go to Mabie.

In contrast, the distance from Oroville eastward to the first siding at Quartz is somewhat longer, thereby requiring 25 to 30 min. for a freight train to move from the siding at Oroville to the siding at Quartz. If the time interval available is less than about 30 min. the move cannot be made. Thus the point I want to emphasize is that, in my opinion, the distance to the first siding should be comparatively short so that the dispatcher can take advantage of short intervals of available time.

Another consideration is that, ordinarily, a train departs from a siding more promptly than from the yard. For this reason there seems to be a definite advantage in getting a train out of the yard and on its way. The fact that the yard track is cleared 15 or 20 min. sooner is also a help. When checking our automatic graph records recently, I noted that in numerous instances a westbound freight train was advanced from Portola yard to Mabie on rather short time, as, for example, between two sections of the eastbound passenger train the Exposition Flyer. This shows that we utilize the C. T. C. to advantage, and with entire confidence that the second section of the passenger train will not be delayed. In such an instance, the westbound freight train would have been delayed at least 25 to 30 min. if held in Portola until after the eastbound passenger train arrived.

A conclusion, therefore, is that the idea discussed in your editorial as applied where sidings are spaced as I suggest, will save considerable delay for freight trains when ready to go.

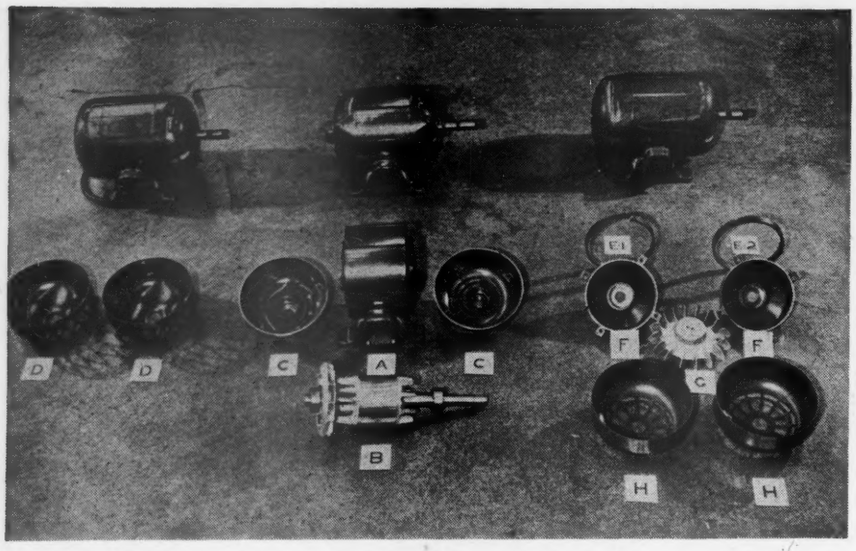
G. S. Allen
Chief Dispatcher
Western Pacific

The compact design of the Model TR permits clear vision of all hauling operations

Buda Model TR Chore Boy Tractor

A new industrial shop truck, known as the Model TR Chore Boy tractor, has been announced by the Buda Company, Harvey, Ill. Said to be powerful and capable of operating in small areas, this unit is designed to speed up towing.

The new model, powered by a four-cycle, air-cooled engine, weighs approximately 1300 lb. and has a drawbar pull of 1050 lb. Its transmission is of the standard automotive type, with three speeds forward and one reverse. Like other Buda Chore Boys, the Model TR is equipped with a foot brake and an automatic brake, and is available with standard-type couplers.



Interchangeability is a feature of the motors—The three basic types shown may be assembled from the relatively small number of component parts shown in front of the motors

All-Steel Electric Motors

A completely new line of alternating current induction motors is now in production in the recently established Buffalo, New York, plant of the Westinghouse Electric Company. The motor, known as the Life-Line, is more than 35 per cent smaller in size than its predecessor. The reduced size has been accomplished without sacrifice of electrical properties. Starting torques have been increased as much as 134 per cent per lb. of motor, and maximum torques increased as much of 116 per cent per lb. of motor. High efficiencies and power factors are maintained. The appearance is much improved and maintenance requirements are said to be materially decreased. The bearings are designed to run without attention for at least five years. Shock resistance is increased many-fold. Vibration and noise have been reduced to new low limits. It is also claimed that fewer insulation burnouts will be experienced because of new features in insulating materials and improved winding techniques.

The structural steel sections from which the motor is made are as thick as they would be if made from cast iron, and shock resistance is thereby greatly increased. It has also been determined that steel does not corrode faster than cast iron. Research tests demonstrate the two materials corrode at equal rates. The explanation for the common belief lies in the fact that when cast iron is replaced by steel, the steel is usually of thinner section and will rust through sooner. Where thick steel sections are used, excessively rapid corrosion is not experienced.

The finish coating on the motor consists of base coats of baked thermoset varnish with a final coat of lacquer. In some extremely severe applications, such as in chemical plants, stainless steel will be used for shields and hoods.

The use of steel has resulted in a smaller size. Size is also reduced by an improved cooling system. The open-protected motor is 83 per cent as large in diameter, and 94 per cent as long, or a saving of 35 per cent of the volume of last year's machines. The new totally-enclosed motor is 83 per cent as large in diameter, and 82 per cent as long, saving 44 per cent of the volume of its predecessor. (Standardized N. E. M. A. dimensions have been maintained.) Sizes of electrical working parts have remained substantially the same.

Smooth, quiet operation has been accomplished by careful engineering and through precision manufacture. Mechanical harmonic forces, produced by unbalance, are eliminated by dynamic balancing. Further improvement in mechanical balance is obtained in these motors through straighter shafts and improved bearing concentracity. Spiders are shrunk and not pressed on shafts.

Completely proven prelubricated ball bearings are used throughout the line. It is felt that five years without relubrication is conservative. Originally the bearings are expertly greased in the factory with high-quality, long-life material. Relubrication with comparable methods and grease will prolong the life of the motor.

Winding has been made much easier and there is less handling and bending of the coils with a consequent reduction of damage. Winding materials are of high quality, synthetic resin-covered wire. Multiple dips and bakes of thermoset varnish give a hard, smooth, and well-protected winding. The shortened coil extensions used are less vulnerable to damage.

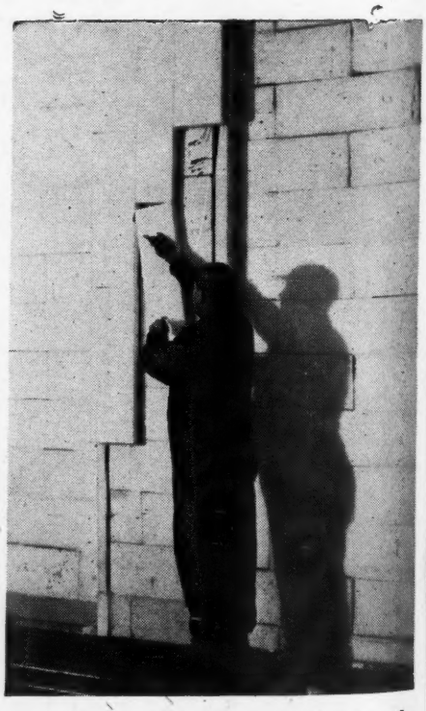
Several types of motors are attained through extensive interchangeability of component parts.

Low Temperature Insulation Material

Styrofoam is an insulating material some six times lighter than cork. It has a weight that varies from 1.3 to 2 lb. per cu. ft. and an insulating value for a piece 1-in. thick of 0.27 to 0.30 B.t.u. per sq. ft. per hr. per deg. F. This product of the Dow Chemical Company, Midland, Mich., consists of Styron, a thermoplastic, expanded 40 times.

This expansion produces a pure white, lightweight, multicellular mass of foam-like material with low thermal conductivity, good structural strength and the ability to resist moisture and water. Styrofoam is tasteless, odorless and has good resistance to mold and rot. Atmospheric exposure does not affect it adversely and it does not lose its strength at low temperatures. It is said to show no tendency to disintegrate or settle, and to be suitable for refrigerator-car installations.

The physical structure of Styrofoam consists of a mass of small walled or sealed cells. The continuous wall of the individual cells is claimed to prevent water permeation and freezing within the structure, and to enable Styrofoam to maintain its insulation efficiency throughout use.



Styrofoam slabs being applied to the side walls of a commercial storage plant

GENERAL NEWS

"Talk Up" the Rail Story, Says Vollmer

Calls on industry to inform public, employees of roads' plight

Railroad management and supply manufacturers must keep before the public the story of the railroad industry—particularly the unfairness of subsidies to competing forms of transportation—if "our industries are to survive," W. G. Vollmer, president of the Texas & Pacific, declared at Chicago on February 17.

The T. & P. executive, speaking before a dinner meeting of the Western Railway Club at the Sherman hotel, charged that the attitude of many business men is one of "let me alone while I attend to my business." This attitude, he stated, completely overlooks the fact that no business can stand alone; that all are interdependent one upon the other; and that there should be a reasonable degree of unanimity of understanding and consideration for each other's problems. He asserted that there should be "a reasonable degree of helpful cooperation when one business or industrial group is being harassed and oppressed by socialistic and radical legislative measures."

Mr. Vollmer advocated the telling of the "railroad story" through the use of employee publications, by pamphlets distributed with pay checks, through advertising programs and by addressing business or service clubs. He said that chief executives should organize their respective companies into an association, suitably staffed, to direct the work of fully informing the general public and the legislators in the large cities, in the states and in Washington of the "iniquitous inequality which exists in transportation and the kind of legislation needed to correct it."

Attacking subsidized competition of the commercial air lines, the speaker declared: "Many of the cities throughout the nation have been extremely timid in their dealing with air line managements, but these same cities have been unusually courageous in spending the taxpayers' money for expensive air terminal facilities. Apparently these cities are fearful that unless important and expensive concessions are made to the air lines, they will not be included on the air line routes."

Mr. Vollmer condemned the unfair financial burden placed on taxpayers through operation of commercial air lines, declaring that, at one particular airport, the air lines paid at the rate of 58 cents per landing and take-off, while the taxpayers paid at the rate of $6.92. Citing other figures, he said 14 air lines, with a total operating income of $204 million, paid in federal income and excess profit taxes a total of $16 million. The Texas & Pacific alone, with an operating revenue of $75 million, paid federal taxes amounting to $17 million, or nearly ½ million dollars more than all 14 air lines together, he declared.

The railroad president discussed subsidies to other transportation agencies, concluding that "we cannot successfully compete with other forms of transportation which are subsidized by the federal government with the taxpayers' money. It is up to us to point the way, to tell this story of our industry to our respective employees and the public as it has never been told before. The time to do that is today—tomorrow may be too late."

A Rival for "Labor"

Described as its "official weekly publication," an 8-page tabloid-size paper, the Trainman News, has been launched by the Brotherhood of Railroad Trainmen. According to the editorial announcement, its function is "to inform B. of R. T. members of the problems of the day as they affect their interests and to tell outsiders of the things for which the B. of R. T. stands."

The first issue of the new weekly, dated January 30, included a "preview" of testimony of the brotherhood's chairman, A. F. Whitney, before congressional committees planning revisions of labor legislation, and a report of the union's active opposition to the Bulwinkle bill to legalize joint action on rates, which measure, it said, would "work" as follows: "Suppose an individual railroad wanted to offer a week-end excursion. It would file with the American Association of Railroads, which would have the authority to accept or reject the idea, without passing it on to the Interstate Commerce Commission for approval even. . . . The Bulwinkle bill would put a legal blessing on monopoly tactics of this kind."

Pearson of the New Haven Made A. S. A. Director

Among the six directors elected to the board of the American Standards Association at a meeting in New York recently was R. L. Pearson, vice-president of the New York, New Haven & Hartford. In his three year term as a director Mr. Pearson will represent the Association of American Railroads.

A.R.E.A. Announces Convention Program

Addresses by C. McD. Davis and R. S. Henry feature Chicago meeting

The American Railway Engineering Association has announced the complete program for the annual convention of the association to be held at the Palmer House in Chicago on March 18 to 20, inclusive.

In addition to the address of the president and the reports of the secretary and the treasurer, the opening session on Tuesday morning will be featured by an address by Robert S. Henry, assistant to president, Association of American Railroads. Another special feature of this session will be the presentation of an honorary membership in the association to D. J. Brumley, a past-president of the association, and retired chief engineer, Chicago Terminal improvements, of the Illinois Central. On Tuesday afternoon the session will adjourn at 4:30 p.m. to permit those in attendance to view the exhibition of equipment and materials of the National Railway Appliances Association at the Coliseum.

During the morning session on Wednesday Prof. Ralph B. Peck of the University of Illinois will present an address on roadbed stabilization. Immediately thereafter those in attendance at the convention will meet at a luncheon to hear an address by C. McD. Davis, president of the Atlantic Coast Line. The Wednesday afternoon session will be featured by two addresses—one by Prof. R. E. Cramer of the University of Illinois, who will speak on rail failures in general, and another by G. K. Manning of the Battelle Institute, who will discuss the metallurgical aspects of shelly spots.

The regular sessions of the meeting will be presided over by J. B. Akers, president of the association, and chief engineer of the Southern, assisted by Vice-President A. Chinn, president of the Terminal Railroad Association of St. Louis. The program in detail follows:

Tuesday Morning, March 18

Address by Col. R. S. Henry, assistant to president, A.A.R.
Address by J. B. Akers, president
Reports of the secretary and the treasurer
Presentation of honorary membership to D. J. Brumley, past-president
Reports of committees on
  Economics of Railway Location and Operation
  Highways

Tuesday Afternoon

Reports of Committees on
  Cooperative Relations with Universities
  Yards and Terminals
  Waterways and Harbors
  Water Service and Sanitation
Adjournment to visit the exhibition of the

National Railway Appliances Association at the Coliseum

Wednesday Morning, March 19

Reports of Committees on
- Maintenance of Way Work Equipment
- Economics of Railway Labor
- Ties
- Wood Preservation
- Roadway and Ballast

Address by Prof. Ralph B. Peck, University of Illinois, on Roadbed Stabilization

Annual Luncheon

Address by C. McD. Davis, President, Atlantic Coast Line

Wednesday Afternoon

Reports of Committees on
- Buildings
- Track
- Rail

Address by Prof. R. E. Cramer, University of Illinois on Rail Failures

Address by G. K. Manning, Battelle Institute, on the Metallurgical Aspects of Shelly Spots

Thursday Morning, March 20

Reports of Committees on
- Uniform General Contract Forms
- Records and Accounts
- Waterproofing
- Impact and Bridge Stresses

Installation of Officers

Reports of Committees on
- Masonry
- Iron and Steel Structures
- Clearances
- Wood Bridges and Trestles

35 Roads Join in "Travel-and-Charge-It" Plan

Thirty-five railroads have entered into a "travel-and-charge-it" plan which requires the passenger to have only one credit card to purchase tickets from any of the participating roads, H. W. Siddall, chairman of the Railroad Passenger Interterritorial Committee, announced at Chicago on February 18.

The plan, to go into effect on April 1, was developed from suggestions obtained last summer in a poll of 20,000 business concerns. Mr. Siddall said that should a passenger's trip include travel over railroads not participating in the plan, tickets over such lines will be furnished on the credit plan provided the trip originates on a participating road.

Credit cards will be issued to individuals and to companies for their employees upon application to the Rail Travel Credit Agency, a joint organization set up by the railroads, with headquarters at the Chicago Union Station, room 436. Satisfactory credit references will be required, Mr. Siddall said.

He explained that the plan requires "no deposit, no service charge, no red tape and is as simple as a department store charge account. All the traveler has to do is to present his card at a ticket office of a participating railroad, sign a receipt and get his tickets. Subscribers to the plan will be billed monthly for the transportation purchased."

It was pointed out that the individual roads themselves would determine whether or not the credit cards should be honored on trains as well as at ticket windows, and whether the cards would include meals and other services on credit. In addition to this plan, several of the participating roads have separate credit plans in operation on their own lines.

Roads taking part in the plan are as follows: Alton; Atchison, Topeka & Santa Fe; Baltimore & Ohio; Boston & Albany; Burlington-Rock Island; Chicago & North Western; Chicago, Burlington & Quincy; Chicago & Eastern Illinois; Chicago, Milwaukee, St. Paul & Pacific; Chicago, Rock Island & Pacific; Chicago, St. Paul, Minneapolis & Omaha; Colorado & Southern; Denver & Rio Grande Western; Ft. Worth & Denver City; Frisco Lines; Great Northern; Gulf Coast Lines; Gulf, Mobile & Ohio; Illinois Central; Illinois Terminal; International-Great Northern; Kansas City Southern; Louisiana & Arkansas; Minneapolis & St. Louis; Missouri-Kansas-Texas Lines; Missouri Pacific; New York Central; Pennsylvania; Northern Pacific; Pittsburgh & Lake Erie; Spokane; Portland & Seattle; Texas & Pacific; Union Pacific; Wabash; and Western Pacific.

The Chesapeake & Ohio, Pere Marquette and New York, Chicago & St. Louis already have made a credit card plan effective (as previously reported in *Railway Age*), the mechanics of which are somewhat different from the 35-road plan. Robert J. Bowman, president of the C. & O., stated that the roads controlled by the Alleghany Corporation would honor the credit cards issued by the new Rail Travel Credit Agency and other railroads. "We should like to see the development of a credit card plan which would embrace all roads," he added.

Plan 5-Day Course at Purdue on Transport Losses

A short course for freight claim and agricultural department officers of railroads in transportation losses of fruits and vegetables has been tentatively scheduled for March 24 to 28, inclusive, at Purdue University, LaFayette, Ind., according to a recent bulletin of the Association of American Railroads, freight claim division, at Chicago. Subjects covered in the course will range from the "Nature of Plants and Their Transportation Pests," to "Containers and Loading." In addition to the latter subject, other railway operating discussions will include the "Fan Car" and the "Refrigerator Car."

Sees End of Construction Machinery Shortage Soon

Speaking before a luncheon meeting of 400 sales representatives of the Industrial Power division of the International Harvester Company, Neal Higgins, manager of sales, predicted that the supply of most construction machinery will exceed the "critical" demand some time during the year of 1947. Continuing, Mr. Higgins said that, "barring unforeseen disaster, it is believed that the production, or supply rate, in the construction machinery industry can be greater by the end of 1947 than in any previous year."

The meeting was held at International Harvester's new Melrose Park, (Ill.) works on February 12, 1947, in connection with the opening of a large exhibit of industrial equipment. Regarded as one of the most complete displays of such equipment ever to be presented, the show occupied a 40,000-sq. ft. section of the Melrose Park works and included not only International Harvester's complete line of tractors and power units, but also many units of matched equipment, such as bulldozers, graders, tractor-powered dirt wagons, scrapers and other units for digging and transporting dirt, all designed for use with International tractors and power units. A total of 32 equipment-manufacturing companies were represented in the exhibit.

C. & O. Coal Loading Record

The Chesapeake & Ohio broke its monthly coal loading records in January when 135,729 cars were loaded, Robert J. Bowman, president, has announced. The previous high was 129,847 cars loaded in August, 1946. Mr. Bowman said the January total of coal loaded represented an increase of 22,436 cars, or 19.8 per cent, over the same month of 1946.

Station Agent's Job Outlined

It's the station agent who creates and carries the community's impression of the railroad, according to a statement—"The Agent's Postion in the Operating Organization"—prepared and issued by the Chicago, Indianapolis & Louisville to all agents along its line as a step toward improved relations and service to the public. The statement, prepared by Frank E. Cheshire, general manager, reads in part: "As the local representative of an industry founded upon principles of public service, he [the agent] must be active in all community life. Otherwise his principal—the Monon—fails to meet its institutional responsibilities."

January Operating Revenues 6.5 Per Cent Above 1946

From preliminary reports of 87 Class I railroads representing 81.6 per cent of total operating revenues, the Association of American Railroads has estimated that the January gross amounted to $556,570,180, an increase of 6.5 per cent above the $522,701,275 reported for the same 1946 month. Estimated January freight revenues were $446,119,774, compared with $368,138,398, an increase of 21.2 per cent, while estimated passenger revenues were $68,151,889, compared with $112,585,360, a decrease of 39.5 per cent. The estimate for all other revenues was $42,298,517, an increase of 0.8 per cent above January, 1946's $41,977,517.

Equipment on Order

Class I railroads had 69,538 new freight cars on order on February 1, as compared with 38,090 on the same day last year, according to the Association of American Railroads. Additional orders for freight cars also have been placed since February 1, the A. A. R. added.

This year's February 1 total included 19,373 hopper, of which 2,073 were covered hoppers; 4,520 gondolas, 886 flat, 28,716 plain box, 5,366 automobile, 9,609 refrigerator, 750 stock and 318 miscellaneous freight cars.

The Class I roads also had 639 locomotives on order February 1, compared with 454 on the same day in 1946. The

former total included 53 steam, six electric and 580 Diesel-electric locomotives, compared with 81 steam, six electric and 367 Diesel-electrics a year ago.

Class I roads installed 2,795 freight cars in service in January, compared with 2,457 in the same month last year. Those installed this year included 435 hopper, of which 46 were covered hoppers; 185 gondolas, 42 refrigerator, 524 automobile box, 1,299 plain box, 210 flat and 100 miscellaneous freight cars.

The Class I roads also put 74 new locomotives in service in January, of which seven were steam and 67 were Diesel-electric. New locomotives installed in January, 1946, totaled 21, of which 11 were steam, and ten Diesel-electric.

Short Line Association Will Meet October 16-17

The thirty-fourth annual meeting of members of the American Short Line Railroad Association will be held at the Hotel New Yorker in New York on October 16 and 17, the association's board of directors decided at a February 13 meeting in Washington, D. C. The next meeting of the board will be held in Washington on June 12.

In addition to deciding on the annual member-road meeting, the board authorized participation by the association, on behalf of the membership and to the extent authorized by members, in the pending car service and per diem proceedings before the Interstate Commerce Commission; in "possible labor cases"; and in the "anticipated petition for an increase in railway mail pay."

Freight Car Loadings

Loading of revenue freight for the week ended February 15 totaled 799,977 cars, the Association of American Railroads announced on February 20. This was an increase over the previous week of 32,496 cars, or 4.2 per cent, an increase of 92,923 cars, or 13.1 per cent, above the corresponding week last year, and an increase of 15,274 cars, or 1.9 per cent, above the comparable week in 1945.

Loading of revenue freight for the week ended February 8 totaled 767,841 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, February 8

District	1947	1946	1945
Eastern	149,784	140,384	136,198
Allegheny	163,453	127,507	156,448
Pocahontas	58,473	56,476	60,238
Southern	132,381	130,592	125,134
Northwestern	72,802	75,714	82,382
Central Western	126,579	121,194	123,276
Southwestern	64,009	61,373	72,156
Total Western Districts	263,390	258,281	277,814
Total All Roads	767,481	713,240	755,832
Commodities:			
Grain and grain products	47,304	50,844	41,340
Livestock	11,276	18,348	13,575
Coal	176,356	186,166	176,222
Coke	14,366	8,244	14,714
Forest products	48,122	35,588	38,904
Ore	11,295	5,878	10,757
Merchandise l.c.l.	113,159	120,252	96,774
Miscellaneous	345,603	287,920	363,546
February 8	767,481	713,240	755,832
February 1	835,051	723,301	739,556
January 25	821,964	708,554	759,625
January 18	828,060	749,443	777,572
January 11	830,945	772,888	783,060
Cumulative total, 6 weeks	4,083,501	3,667,426	3,815,645

In Canada.—Car loadings for the week ended February 8 totaled 65,241 cars, as compared to 69,962 cars for the previous week and 64,553 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
February 8, 1947	65,241	35,752
February 9, 1947	64,553	34,810
Cumulative totals for Canada:		
February 8, 1947	399,273	213,485
February 9, 1947	383,663	199,737

San Francisco General Agents Elect New Officers

Daniel Tinney, general agent of the Northern Pacific at San Francisco, Cal., was elected president of the Railroad General Agent's Association of that city, at a meeting on February 3. Other new officers, all located at San Francisco, are: 1st vice-president, G. F. Allen, general agent, Union Pacific; 2nd vice-president, G. A. Erickson, district freight agent, Southern Pacific; 3rd vice-president, L. J. Marion, general agent, Erie; secretary, George W. Phelps, general agent, Louisville & Nashville; and treasurer, H. R. McCorkel, district freight representative, Baltimore & Ohio.

The association's board of directors include the following: Merten B. Baker, general agent, Chicago, Burlington & Quincy: E. J. Piatt, district freight agent, Atchison, Topeka & Santa Fe; J. F. Carroll, district traffic agent, New York, New Haven & Hartford; Reid M. Rowan, general agent, Texas & Pacific; and A. A. Bolton, general agent, Denver & Rio Grande Western.

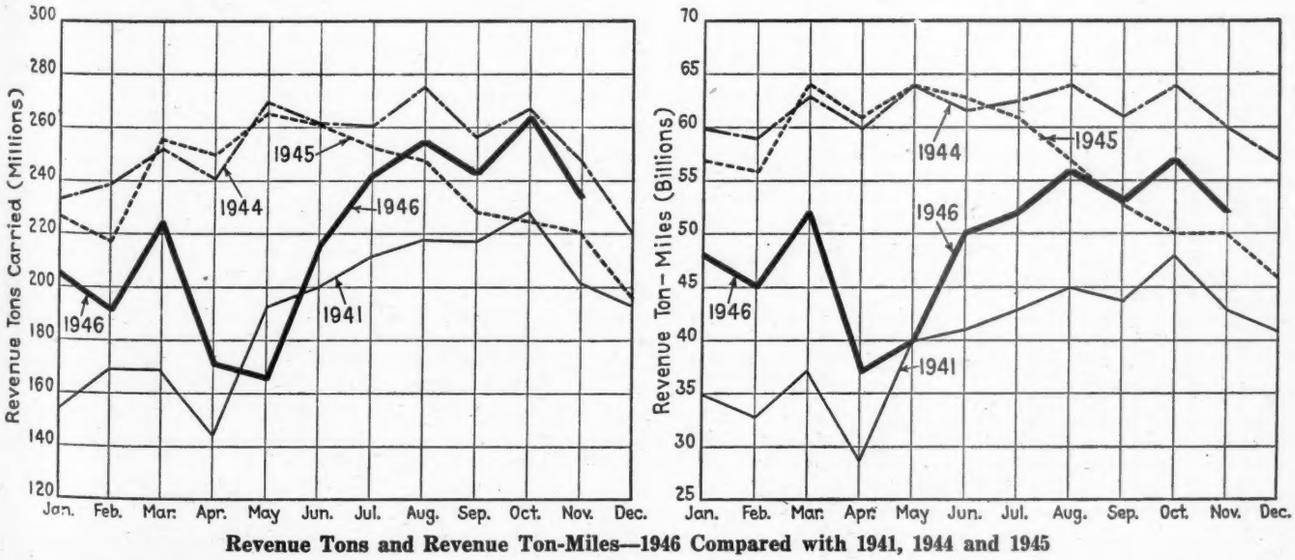
Santa Fe Refrigerator Car—A Correction

The convertible bunkers installed on the stainless-steel refrigerator car built by the Consolidated Steel Company for the Atchison, Topeka & Santa Fe are a product of Preco Incorporated. In the third paragraph of the description of this car beginning on page 273 of the February 1 *Railway Age* the bunkers are incorrectly referred to as a product of Consolidated Steel.

P. R. R. "Red Arrow" Derailed on Mountain Curve

The derailment on February 18 of the Pennsylvania's eastbound "Red Arrow," at a point two miles east of Gallitzin tunnel, near Altoona, Pa., on the main line from Pittsburgh to Harrisburg, resulted, according to early compilations, in the death of 22 persons and injuries to some 124 others.

The accident occurred about 3:25 a. m. on an 8-degree curve on a descending grade on which a speed restriction was effective. The train's two K-4 type steam locomotives and five cars (one mail-baggage car, one dining car, and three sleeping cars) were derailed and overturned, coming to rest in various positions on a sloping bank and in a ravine which is about 55 ft. below the rail level. A baggage-passenger car



Revenue Tons and Revenue Ton-Miles—1946 Compared with 1941, 1944 and 1945

and three sleeping cars were derailed but remained on the roadbed, while the four rear cars (two sleeping cars, on coach and one baggage car) remained on the track.

The train was proceeding on Track No. 2, and that track and Nos. 3 and 4 (the westward main tracks) were made unserviceable by the accident. Track No. 1, for eastward running, was not damaged, and eastbound trains continued to use it. With the use of four wrecking trains, Track No. 2 was restored to service before noon, and the two westward tracks became available for train movements about 8 p. m. Meanwhile, eight westbound trains had been detoured on the New Portage branch. Pending investigation, no statement was made as to the cause of the derailment.

Honorary Degree to S. P. Bush

Stevens Institute of Technology at its midwinter commencement exercises in Hoboken, N. J., conferred on Samuel Prescott Bush the honorary degree of doctor of engineering. Mr. Bush, now 84, is a Stevens graduate who was once employed by the Pennsylvania and the old Chicago, Milwaukee & St. Paul, for which he became general superintendent of motive power. For 26 years, beginning with 1901, he was associated with the Buckeye Steel Castings Company of Columbus, Ohio, first as vice-president and general manager and then, from 1905 to 1927, as president.

Drexel Award Goes to P. R. R.

The Drexel Award of the Drexel Institute of Technology, given this year for the first time, was presented to the Pennsylvania on February 19 at a dinner at the Hotel Barclay, Philadelphia, Pa., which was attended by 200 officers of the city's industrial and commercial establishments. The award, given in recognition of exceptional contributions made by corporations and associations to the industrial, technical, economic or social development of the Philadelphia area, was accepted, on behalf of the railroad, by M. W. Clement, its president.

Washington, D. C., Traffic Club Holds Annual Dinner

Approximately 500 members and guests of the Traffic Club of Washington, D. C., attended the club's fortieth annual dinner at the Mayflower Hotel in that city on February 12. The speaker was Robert Ramspeck, executive vice-president of the Air Transport Association of America, who discussed "The Place of the Air Carrier in Transportation."

Singling out the evolution of air cargo transportation for special emphasis, Mr. Ramspeck said that the scheduled air lines are now in a position to adapt themselves to the kinds of cargo they can carry, and are prepared "to exploit aggressively their potentialities as mass carriers of property." He pointed out that they have organized a joint subsidiary, Air Cargo, Inc., which is expected "to assume all the coordinating functions to make the air-surface network possible."

Mr. Ramspeck also referred to the recent series of air accidents, citing in that connection what he called "the excellent safety record of the domestic regulated air lines in 1946, which was 1.2 fatalities per hundred million passenger-miles, a decrease from 2.17 in 1945." He predicted that the coming years "will see an unprecedented low accident and fatality rate, and that the hazards of flying due to adverse weather, uneven terrain and other causes can be virtually eliminated by the safety measures being developed and placed in operation by the air lines and the federal government."

John W. Vessels, president of the club, presided at the dinner, while guests at the head table included R. V. Fletcher, president of the Association of American Railroads; J. M. Hood, president of the American Short Line Railroad Association; Clyde B. Aitchison, chairman of the Interstate Commerce Commission; and Major General E. H. Leavey, chief of transportation of the Army. Chairman of committees which arranged the dinner were Francis G. McCann, William E. Hays, and Floyd J. Herhusky.

Club Meetings

The Indianapolis Car Inspection Association will meet on March 3 at 7 p. m. in the Union Station, Indianapolis, for a discussion of A. A. R. rules.

The Central Western Shippers Advisory Board, in cooperation with a number of organizations at Denver, Colo., will give a luncheon in that city on March 19, in the Lincoln room of the Shirley Savoy hotel. This meeting will launch the freight loss and damage prevention committee program of the April "perfect shipping month" campaign in Colorado. R. V. Fletcher, president of the Association of American Railroads, will be the principal speaker.

Bolivia Authorizes Completion of La Paz-Beni Line

Bolivia has authorized the renewal of construction work on the La Paz-Beni railroad project which was begun in 1915 and stopped in 1925, according to the Foreign Commerce Weekly, a publication of the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. The project will cost approximately 930,000,000 bolivianos ($22,000,000), of which $2,000,000 will be used for the purchase of rolling stock, and calls for the laying of approximately 250 miles of one-meter gage single track, with occasional sidings. Work on the first section (about 33 miles long) may begin around the middle of April and is expected to be completed about October, 1948.

New Haven Freight Derailment Halts Traffic 18 Hours

Four main line tracks and the New Canaan (Conn.) branch of the New York, New Haven & Hartford were blocked by the derailment at 11:05 a. m. on February 15 of 30 freight cars of a 98-car train. The accident, which occurred near Stamford, Conn., halted all traffic in both directions for 18 hours. Within an hour after the accident the New Haven, with the participation of seven motor bus companies, had put 100 buses into operation shuttling through-train passengers around the derailment area. Because of the difficulty of removing the smashed cars and lading, broken rails and debris, the restoration of the first main line track — used by westbound traffic—took 18 hours. All tracks were reopened to traffic in about 36 hours, during which 18,000 through-train passengers had been shuttled.

Trainees Are Not Employees Under Minimum-Wage Law

The Supreme Court of the United States on February 17 handed down two decisions ruling that railroad trainees are not employees within the meaning of the Fair Labor Standards Act, and thus railroads are not required to observe minimum-wage standards during the training period. Justice Black, speaking for an unanimous court delivered both opinions.

The court's determination was made in a case involving Portland (Me.) Terminal practices with respect to the training of yard brakemen; and it was followed in the other case which involved practices of Nashville, Chattanooga & St. Louis with respect to the training of yard and main-line firemen, brakemen and switchmen. In both cases the lower courts had ruled against L. Metcalfe Walling, administrator, Wage and Hour Division, Department of Labor, who sought to enjoin the railroads from alleged violations of the Fair Labor Standards Act. The training of clerks, stenographers, callers, messengers and "other similar general miscellaneous workers" was also brought into the N. C. & St. L. case by the administrator, but in that connection the Supreme Court found nothing to challenge the district court finding that the road had been "complying with the act in good faith" in its relations with such employees.

In reaching its determination with respect to train and yard service trainees in the Portland Terminal case, the court found that these beginners "do not displace any of the regular employees who do most of the work themselves, and must stand immediately by to supervise whatever the trainees do." The trainee's work "does not expedite the company's business, but may, and sometimes does, actually impede and retard it." If the act's definitions stamped as employees all persons who "might work for their own advantage on the premises of another," Justice Black said later on, "all students would be employees of the school or college they attended, and as such entitled to receive minimum wages."

Justice Frankfurter noted his concurrence in a brief separate statement, while a longer concurring opinion came from Justice Jackson, who took occasion to scold the court for the way it has been deciding cases arising under the Fair Labor Standards Act.

A list of current publications appears on page 437.

With the Government Agencies

Opposes Rail-Rate Rule of Anti-Monopoly Bill

I.C.C. suggests that uniformity requirement be eliminated from Senate measure

The Interstate Commerce Commission is opposed to the uniform-rate provisions of the pending "anti-monopoly" bill, S. 72, which has been introduced in the Senate by Senator Morse, Republican of Oregon, for himself and Senators Aiken of Vermont, Langer and Young of North Dakota, Republicans, Murray of Montana, Taylor of Idaho and Kilgore of West Virginia, Democrats. The bill is an omnibus measure which would undertake to deal with various phases of the anti-trust situation, the uniform-rate provisions being in Title III.

Following generally recommendations made in that connection by the defunct Board of Investigation and Research, these provisions would direct the I. C. C. to make public within nine months of the title's effective date a proposed uniform classification for the transportation of property by railroad throughout the country, and a proposed scale of uniform class rates. Within three months after the proposed classification and rate scale were made public, hearings on them would have to be started by the commission; and a final uniform classification and rate scale would be prescribed after "full hearing," but not later than two years from the beginning of hearings.

The I. C. C.'s position was set out in a letter which the chairman of its legislative committee, Commissioner Splawn, wrote last September to give the commission's views on the similar "anti-monopoly" bill which Senator Morse introduced in the previous Congress. The Splawn letter went to the Bureau of the Budget which also gathered presentations with respect to the proposed legislation from various other interested government agencies, meanwhile making its own report on the bill. All of this material was published, at Mr. Morse's request, in the Congressional Record for February 14, the day on which the senator made a speech about the bill.

Requirement Anticipated — Commissioner Splawn's letter called attention to the fact that the commission on May 15, 1945, issued its report in the Nos. 28300 and 28310 class-rate and classification proceedings in which it found that railroad classifications of freight were unreasonable and unduly prejudicial as a whole to the extent that they were not uniform. The railroads, he went on, are actively at work on a uniform classification, and the commission believes that such work will be completed in a shorter time than would be required under the procedure outlined in the bill. He also noted that the class-rate decision will require a uniform scale of rates throughout the country, except in Mountain-Pacific territory; and with respect to the latter, it is the commission's purpose "to investigate those rates as soon as the development of the new classification permits."

"Since we believe that most of the broad objectives of Title III will be attained through compliance with our findings in No. 28300," Commissioner Splawn continued, "we see no advantage which would result from enactment of legislation of this kind. On the contrary, we see disadvantages because the bill apparently would lay down certain positive requirements to govern the rate structure, removing the flexibility permitted by the Interstate Commerce Act as it now reads, under which this commission exercises its administrative discretion upon consideration of the facts bearing upon situations as they arise."

Mr. Splawn also commented on the fact that the proposed legislation would apply only to railroad rates. "Such legislation," he said, "would strongly tend to impair the ability of the railroads to compete with [other] carriers as well as with each other, as they do at present. It is difficult to reconcile this probable effect with the general policy stated in section 1 of the bill 'to contribute to . . . the promotion of competitive free enterprise' and 'to foster competitive private enterprise.'"

The Bureau of the Budget's own report on the bill had this to say of Title III: "In view of the considerations advanced by the Interstate Commerce Commission, the 1940 revisions in the statutes designed to meet these problems, and the cases now before the Supreme Court, further consideration of the desirability of including this title in the bill would be justified. Experience argues strongly against such specific prescription of rate-making standards in a legislative enactment."

(*Continued on page 426*)

Berge Will Leave Department of Justice May 1

Wendell Berge, assistant attorney general in charge of the Department of Justice's Anti-trust Division, has resigned, effective May 1. On that date he will become a partner in a Washington, D. C., and New York law firm to be known as Posner, Berge, Fox & Arent.

Mr. Berge has been in charge of the Anti-trust Division since August 28, 1943, and he brought the pending Lincoln, Nebr., suit against the Association of American Railroads and western roads.

Fletcher and Kendall Heard in Car Inquiry

They tell Reed subcommittee more equipment is only solution to problem

Testimony by R. V. Fletcher, president of the Association of American Railroads; W. C. Kendall, chairman of the A. A. R.'s Car Service Division; and ganeral superintendents of transportation of 13 railroads highlighted the continuation on February 13 and 14 of hearings before a subcommittee of the Senate committee on interstate and foreign commerce on Senate Resolution 47, which calls for an investigation of the shortage of box cars. The resolution was introduced by Senator Reed, Republican of Kansas, chairman of the subcommittee.

Declaring that the railroads must deal with the situation "as a whole" with "due regard" to the necessities of all sections and all shippers, Judge Fletcher said that the answer to present shortages is "not more laws, but more cars, which the railroads are getting as rapidly as they are available, and a continuation of cooperative handling and use of cars to the best advantage, insofar as that is humanly possible."

Unparalleled Traffic—"The railroads wish that it were possible to supply each shipper with every car ordered," he continued. "With the present traffic far exceeding in volume and variety anything ever before handled in peace-time and with the present supply of cars, it cannot be done. There is a shortage of cars, and there will continue to be one for some time to come. It is extremely difficult, and perhaps impossible, to measure the shortage in exact statistical terms, but the director of the Office of Defense Transportation has said . . . that the railroads are handling 85 per cent of the traffic seeking movement. Accepting that as good an overall estimate as is available, I merely remark that to handle 85 per cent of what is by far our greatest peace-time production with a fleet of cars which is necessarily depleted by the war and its aftermath is itself no small accomplishment."

Praising the "organized cooperation" of shippers' advisory boards, government agencies, the Car Service Division and the "efforts of the several railroads and of railroad men everywhere," Judge Fletcher, after noting the record harvests in the last two years, added that "in addition to exceptionally heavy movement of agricultural products in box cars, the railroads have been called upon to handle a tremendous tonnage and great variety of manufactured and miscellaneous articles, and more carloads of l.c.l. freight even than in any of

the war years." He said that 44 per cent of the 1946 wheat crop of 1,155,000,000 bushels had been moved as of January 1, as compared with 39½ per cent in the previous year.

"Against this largely increased demand for service, there has been a decrease in the supply of cars," he continued. "Freight cars are wearing out faster than they can be replaced. This is due in part to the accumulated toll of the wear and tear of the war, which resulted in more cars being retired and scrapped last year than could be built, in part from inability of the builders and the railroad shops to deliver new cars as ordered, and in part from inability of the railroads to hold the number of cars undergoing and awaiting repairs to as low a percentage as they would like to maintain, and doubtless could maintain if the necessary materials could be obtained."

Relief, "If"—The A. A. R. president said that "recent developments" indicate that there should be available in the near future enough steel and other materials to maintain a "satisfactory program" for the repair of existing cars and "to build as many as 7,000 new cars a month." Pointing out that the railroads now have on order more than 80,000 cars, of which he said about half are box cars, Judge Fletcher asserted that "if it were possible to secure new cars at the rate indicated, there should be substatial relief in that direction."

With respect to the distribution of existing equipment to meet the "great transportation task ahead of us," Judge Fletcher said that "it will be indeed difficult to find any solution that will be universally satisfactory." Noting that the 1946 net ton-miles of freight transportation service produced per car per day was "almost double" that in the previous peace-time peak years, the witness said that such a record indicates that "the methods which have been followed have done a reasonably good job in getting the most out of the cars we have."

Asserting that additional legislation will not result in producing more service from the existing rail equipment, Judge Fletcher concluded that "the great accomplishments in handling our post-war transportation problems, which in some respects are even more difficult than those of the war, are the result of the same sort of working together" as existed during the war among shippers, railroads and government agencies.

Presenting a 47-page prepared statement, C. S. D. Chairman Kendall advised that "the only lasting cure for the shortage is an increase in the supply of freight cars." He added that "every feasible measure to expedite the construction of new cars and the repair of old cars should be employed."

Will Order More Cars—"The railroads now have on order in the neighborhood of 82,000 cars," he said. "I am confident that if and when reasonable prospects for delivery become apparent further orders will be placed. Representatives of the Office of Temporary Controls have . . . explained . . . that steps have already been taken to make available to car builders materials and facilities for prospective deliveries of 7,000 or more cars per month. Every available means of support should . . . be given to this agency in order to assure actual accomplishment of the program and to further increase the number of prospective deliveries to the full extent possible. There should be further and continuing appeals to receivers of freight to arrange their employment schedules so as to permit the unloading and release of box cars on Saturdays and holidays so as to minimize as far as possible the impact of the five-day week."

According to Mr. Kendall, the export grain schedules of the Commodity Credit Corporation should be reviewed in cooperation with the railroads in order to fairly balance the requirements of foreign commitments against critical domestic needs. "In a realistic view of the situation," he said, "it is clear that time will be required to bring into satisfactory balance the car supply and the demand for cars."

"With particular reference to the needs of the grain producers and the grain trade, there should be careful review of the grain storage situation to determine whether farm and terminal storage facilities have kept pace with the record of increases in production of grain and grain products," he continued. "It appears reasonable to suppose that an increase in storage facilities would be helpful in relieving the situation in respect of car shortages."

Aiding Western Roads—Mr. Kendall said that pending the availability of an increased supply of freight cars, the railroads "should . . . and will" exert every effort toward the closest supervision possible in the handling of cars now available. He said that in accordance with a suggestion by western railroad executives the C. S. D. has lately located a member of its staff at Chicago, in order that "all practicable assistance may be afforded in the expeditious movement and proper distribution" to and among the railroads in the west of cars moving on orders issued by the C. S. D. He added that the C. S. D. also will undertake "to the extent of its ability" to build up and maintain approximately 90 per cent of ownership of plain box cars on line for those roads which need assistance in meeting demands upon them. "By approximately 90 per cent," he noted, "is to be understood percentages ranging between 86 and 92."

"I feel . . . and I believe it to be generally held that full compliance with the car service rules at the present time, or even substantial compliance, is not practical if the needs of agriculture and industry are to be protected to the full extent of the ability of the railroads to do so," Mr. Kendall asserted. "Nevertheless, it is possible that closer application of Car Service Rule 2 to car handling, particularly that portion of the rule which provides that cars made empty at junction points with the owner shall be returned to the owner at that junction, may be practical and it is the plan of the . . . division to campaign to that end . . ." He said that concentration on such a program would prove helpful in handling the matter of car relocation as between railroads.

Enough Laws Now—"I think it would be unfortunate should the exigencies of the present situation prompt new legislation," he said. "As things stand today, the Interstate Commerce Commission is vested with full power to act in the premises, as conditions may require. The Car Service Division . . . has the full backing of this power residing in the commission. It is worthy of note that since 1922, during all of which time the Car Service Division has administered this matter, there occurred no serious shortage of freight cars until, as a result of the inability of the industry to acquire new equipment during the war and the remarkable increase in demand for transportation following the war, the current shortage came about. I am unable to perceive that the interests of the country would have been in any way better served had the . . . commission throughout this period been under congressional mandate itself to administer the matter of car supply and distribution."

In addition to denying allegations set forth by Walter R. Scott, executive vice-president of the Board of Trade of Kansas City, Mo., that the C. S. D. was partially to blame for the freight car shortage, as reported in *Railway Age*, February 1, page 279, Mr. Kendall told the subcommittee that "the explanation of current departure from car service rules" lies in the fact that 2,264,019 cars were available in 1918 for the movement of slightly more than 400 billion tons of freight one mile as compared with 1,759,662 cars to produce an estimated 591 billion ton-miles in 1946. "It would be wholly impossible to observe the rules at this time without sacrificing the imperative needs of commerce to the equities of ownership," he commented, adding that "on the whole, and within the limits of practicability, the current performance of the railroads in extracting the maximum utility from a depleted supply of . . . cars deserves commendation rather than criticism."

Shippers Cooperating—"Loadings of box cars," he said, "are running 20,000 a week higher than they were a year ago, although there are 7,600 fewer box cars available than there were then. In accomplishing such a result, the railroads have had the cooperation of shippers, which can be measured in heavier loading, in prompter loading and in a decrease in the number of cars held beyond the 48-hours free time allowed. As a result of the efforts of all concerned, the average turnaround time between trips for all box cars has been reduced from 16 days a year ago to 13 days in the month just closed."

Additional statistical data presented by Mr. Kendall disclosed that (1) 59,031 freight cars of all types were retired in 1946, as compared with 41,905 in 1945 and 26,130 in 1944; (2) 40,377 cars were installed in 1946, as compared with 38,987 in 1945, 40,392 in 1944, 28,708 in 1943, 63,009 in 1942 and 80,502 in 1941; (3) approximately 82,000 new cars were on order as of February 1, as compared with 63,829 on January 1; (4) in the period from July 15, 1946, to December 15, there was a reduction in the number of box cars awaiting repairs of about 10,000 to a low of 22,973, or 3.3 per cent of cars on line; (5) it would require the building of 60,000 box cars yearly to offset expected annual retirements of 35,000 and to effect annual increase in ownership of 25,000 box cars;

and (6) the ownership of box cars of eastern and southern roads is 56.5 per cent of the total and the loading in box cars on the same roads is 62.1 per cent of the total, while comparative figures for the western roads are 43.5 per cent and 37.9 per cent, respectively.

Sees Sectional Equity—Mr. Kendall said that it was evident that despite reported shortages, the western lines are getting as must use out of equipment based on ownership as are the eastern and southern roads. "This is further strengthened by the known fact that the average hauls per ton of freight are substantially greater in the West than in the East and South," he noted, adding that, based on the latest data available, there is a "reasonable equity" between ownership and requirements.

According to Mr. Kendall, 139,401 new box cars have been placed in service between 1941 and 1946, of which 71,770 were installed by western roads and the remainder by eastern and/or southern roads. "Within this period of six years, there has been closer attention to a standard car and it is believed that practically all of the new box cars of these years have been of standard size in length and cubic capacity, also as to their fitness for handling the grain and grain products traffic," he observed.

Emphasizing that the freight car shortage is nation-wide and does not affect western grain shippers alone, Mr. Kendall said that while western roads claim that they would be better able to serve their shippers if a greater percentage of their ownership were on home lines, "any railroad serving the grain territory generally will be unwilling to admit that its box car equipment is inferior to that of its neighbor lines." He added that a recent survey covering various months from April, 1946, to January, 1947, revealed that the percentage of western-owned box cars on western roads varied from 49.2 per cent to 56.8 per cent of the total box cars on line.

Mr. Kendall also pointed out that 3,330 cars not originally constructed to handle grain have "helped materially" during the shortage. These included 983 converted stock cars, 1,047 covered hoppers normally used to haul cement and similar commodities, 412 coal hoppers with temporary roofs, 763 open hoppers and 125 so-called "doorless box cars."

Railroad Testimony—General superintendents of transportation who appeared before the sub-committee included H. E. Bixler, New York, New Haven & Hartford; J. J. Mahoney, Atchison, Topeka & Santa Fe; W. M. Christel, Minneapolis, St. Paul & Sault Ste. Marie; K. K. Stokes, Chicago, Rock Island & Pacific; F. E. Sperry, Chicago, Burlington & Quincy; C. W. Pace, Missouri Pacific; J. H. Little, Missouri-Kansas-Texas; H. E. Shumway, Union Pacific; A. M. Ball, St. Louis-San Francisco; O. E. Hallberg, Chicago & North Western; J. B. Smith, Great Northern; C. V. Berglund, Northern Pacific, and J. L. Brown, Chicago, Milwaukee, St. Paul & Pacific.

The attitude of the western road generally was epitomized in the testimony of Mr. Sperry, who told the subcommittee that in order to get more new cars "we must have more material and an incentive to buy or build new cars." Declaring that the present shortage is caused by eight years of depression "when a decreased ownership was justifiable" plus five years of war "when the railroads could not get cars or materials," he said that (1) ownership should be the controlling factor in car distribution among railroads, and no railroad, when it needs cars for its shippers, should be expected to serve them with less than 90 per cent of its ownership on line; (2) as inducements or incentives to buy or build more cars and to stimulate the prompt return of cars to their owners, per diem charges should be increased to a figure "which will represent the value of the use of such equipment," and, if necessary, the I. C. C. should be authorized by law to increase per diem charges above a compensatory level; (3) beginning as soon as possible, and continuing until the car supply is adequate, 12,000 new freight cars should be added monthly to the nation's supply; and (4) as soon as the existing car shortage is relieved, car service rules 1 to 4, inclusive, again should be made effective by mandatory government order, if necessary, "to the end that cars will be more promptly returned to owner roads where they can be properly repaired and upgraded."

Mr. Bixler, who spoke for the Boston & Maine as well as the New Haven, denied charges that the latter holds the cars which come to it for its own purposes instead of returning them to their owners. He said that if a penalty charge is included in the per diem rate it would "inevitably produce inequities."

Per Diem "Inequities"—"For example," he continued, "a short bridge line may be able to receive cars after midnight and deliver them to connections before the next midnight with the result that no per diem at all is paid normally, or if the car is seriously delayed, one day's per diem is paid. On the other hand, a road like the New Haven, which cannot hope to move the cars received from connections to destinations, get them unloaded, and return them to connections in less than five days, would have to pay five days' penalty for doing a perfect job and only one additional unit of penalty if the car were delayed 24 hours.

"A penalty could not move the cars faster because the New Haven is already moving the cars as fast as it can. Other factors than per diem influence the New Haven to do so, primarily the fact that being at the end of the line as we are, failure on our part to move cars as expeditiously as possible results in congestion with its attendant expensive operation and difficulties. . . .

If per diem is to be increased, it must be shown that the cost of ownership is higher than the current per diem figure. There is a strong difference of opinion here. The New Haven's contention is that the cost of ownership was less than $1.15 per day at the time that rate was established. . . . It would be a great injustice to apply penalties to the per diem rate and thus take millions of dollars away from a railroad as a penalty for doing a good job."

Approximately 40 representatives of shippers appeared before the subcommittee this week. The group included E. F. Lacey, executive secretary of the National Industrial Traffic League, who made his own statement and also read another on behalf of J. B. Keeler, chairman of the league's legislative committee and vice-chairman of its emergency transportation committee.

Retirements Overdue—According to Mr. Lacey, the emergency transportation committee was "greatly disturbed" with respect to the car shortage as far back as September, 1944, "because the . . . carriers had not evidenced any disposition to place substantial orders for new equipment for 1945 delivery." He said that it was realized at that time that a large number of freight cars had been retained in service "only because of the emergency of the situation" and the need for continuing in operation "all cars which had wheels." He added that it also was realized that, with the end of the war, it would be necessary for the railroads to retire a "substantial number" of cars.

"The emergency committee recommended in September, 1944, that the O. D. T., in conjunction with the War Production Board and the A. A. R., study the situation for the purpose of developing the facts and the need for new cars and motive power before the capacity of the car manufacturers had been devoted to export business which was already developing in response to inquiries from foreign countries," he said. "The committee subsequently further stressed the wisdom of the railroads placing orders with the car builders, emphasizing that the heavy war traffic, capacity car loading and the longer hauls were important factors in wearing out railroad equipment at an accelerated pace."

Mr. Lacey asserted that shippers "all during the war and in the present post-war period" have been and are loading cars to their safe carrying capacity under the provisions of O. D. T. Order 18A Revised. He said that this heavier loading program frequently involves "considerable expense" to the shipper for additional labor, packing material and extra dunnage.

Shippers' Contribution—According to Mr. Lacey, suggestions which have been offered by the emergency committee to bring about greater efficiency and quicker movements include (1) more prompt movement of cars made empty at industrial sidings; (2) more efficient checks of railroad yards for cars on hand; (3) careful inspection before placing cars for loading to determine whether or not they are suitable for the loading of the commodity to be shipped; (4) prompt use of embargoes where conditions warrant and (5) speedier turn-around time and reduction of delays in terminals and congested areas. "Shippers throughout all sections of the country are suffering today from lack of cars, and the reconversion program is being retarded because of the car shortage," he said. "All shippers need more cars, and need them badly, at the earliest possible moment."

Mr. Lacey informed the subcommittee that although many shippers are loading and unloading cars on Saturdays and Sundays, the cars continue to remain indefinitely on industrial sidings, a condition which

he described as "very discouraging" to both labor and management. Also noting that shippers pay "high demurrage" penalty charges running up to $16.50 per car per day on and after the fifth charge day, Mr. Lacey said that the railroads should "redouble their efforts" to move both loaded and unloaded cars.

In the statement which Mr. Lacey read on his behalf, Mr. Keeler asserted that there is "nothing of greater importance to the national economy than getting more freight cars." Something must be done about this "if our whole . . . economy is not to bog down with resultant widespread unemployment," he added.

Only One Solution—"The box car shortage is not confined to any one section of the country; it is nation-wide," Mr. Keeler continued. "It is not a condition confined to the shipment of any one commodity; it is equally harassing to shippers and receivers of all materials and products that require box cars for their transportation. As cars are shifted from one area to another, or from the transportation service of one commodity to another, alleviation of the shortage as to the receiving area or commodity creates a greater shortage in the area on the service from which the cars are taken. It is a case of taking from Peter to feed Paul. This is inevitable where there is such an overall shortage as presently exists. The only solution lies in providing more cars."

Mr. Keeler said that representatives of the N. I. T. L. had discussed the box car shortage with government officials, including Colonel J. Monroe Johnson, director of the O. D. T., and Dr. J. R. Steelman, director of the Office of War Mobilization and Reconversion, who, Mr. Keeler said, "promised to lay the matter before the President." Mr. Keeler added that "some results . . . but not nearly enough" were produced as the result of a letter addressed to presidents of all Class I roads last December in which the N. I. T. L. urged each road to "do everything possible" to get more cars built.

"Although there are not nearly enough box cars in existence to meet the needs of shippers, it is also true that best utilization of the available supply is not being had," he continued. "Both shippers and railroads are to some extent at fault in this respect. Following the war, there was a general let-down of effort all along the line. Labor became markedly less efficient. The five-day week in industry became an important factor. The railroads, confronted with tremendously increased operating expenses . . . coupled with uncertainties as to future traffic and as to rate relief from the I. C. C., started to cut personnel and other operating expenses rather drastically. Railroad service deterioriated rapidly and materially. The effects of all these deficiencies, shipper and carrier, are still existent. . . . The life of the industrial traffic manager today is no bed of roses. . . . We are constantly under fire from top management because of inability to get cars in which to ship."

Switching Problem—Mr. Keeler said that improvement of reported "inadequate" switching service, "slow" line-haul service and "poor" overall rail service will afford only "some relief." "Today," he concluded, "shipper is alined against shipper, area against area, carrier against carrier, in the battle for cars. We hope that in this battle for cars the infinitely more important factor of getting more cars built just as rapidly as possible will not be subordinated. In that lies the only solution of the problem."

According to a tentative schedule announced by Senator Reed, presidents of western and other roads which have been unable to procure sufficient equipment, in addition to representatives of the Office of Temporary Controls, the Civilian Production Administration branch of the O. T. C., and officers of steel plants which provide steel for freight car production will appear before the subcommittee starting February 25.

Determined to alleviate the western grain shipment backlog, Senator Reed this week charged that western railroads and shippers were "being sacrificed" for those in the East with respect to the allocation of available box cars. The subcommittee chairman produced an exhibit which indicated that, as of February 1, rail carriers in the western district had 89.5 per cent of their box car ownership on line, as compared with 110.1 per cent in the Eastern district and 101.9 per cent in the Alleghany district. Other members of the subcommittee, notably Senator Meyers, Democrat of Pennsylvania, and Senator Capehart, Republican of Indiana, also have been active participants in the hearings. Both have reported receiving a number of complaints from shippers in their respective states who have been unable to procure sufficient freight cars.

Illinois Roads Seek I. C. C. Order on Intrastate Rates

Railroads operating in Illinois have asked the Interstate Commerce Commission to institute an investigation into the refusal of the Illinois Commerce Commission to authorize intrastate rate increases in line with the general interstate adjustment approved by the I. C. C. in Ex Parte 162.

Probe Will Determine Whether Air Rates Are Too Low

The Civil Aeronautics Board has instituted a general investigation of rates, fares, and charges maintained by certificated airlines for the transportation of passengers and property in interstate commerce. The February 13 order of investigation said, among other things, that the prevailing general level of rates "may be unjust or unreasonable," and that some adjustment "designed to accomplish an overall increase in non-mail revenues of such air carriers may be required." The proceeding is docketed as No. 2808.

Would Issue Stock to Complete Purchase of "Q" Bus Line

American Bus Lines has applied to the Interstate Commerce Commission for authority to issue additional common and preferred stock to finance its acquisition of the remaining 49 per cent of Burlington Transportation Company stock from the Chicago, Burlington & Quincy. The application notes that American has previously acquired a 51 per cent interest in the former C. B. & Q. bus-operating subsidiary.

The additional 49 per cent would be acquired pursuant to a December 31, 1946, agreement for $1,392,700, according to the present application wherein American proposes to issue 41,655 shares of no-par common and 10,413 shares of $100-par preferred for a total consideration of $2,290,950. The $898,250 balance remaining after acquisition of the Burlington stock would replenish general cash funds and discharge outstanding debts.

Will Probe Minimum Rates Between North and South

The Interstate Commerce Commission has instituted an investigation of minimum railroad and rail-water traffic rates on all interterritorial class-rate traffic, both carload and l. c. l., moving between the North and South. The proceeding is docketed as No. 29677, and the respondents are all rail and water common carriers operating within Official Classification and Southern Classification territories or between those territories.

Can't Make General Rule on Irregular-Route Trucking

The Interstate Commerce Commission has been "reluctantly compelled to the conclusion that it is impossible to lay down a general rule" by which the regular- or irregular-route character of trucking operations can be determined. Because "too much depends upon the peculiar characteristics of each considered operation and upon the surrounding circumstances," the commission is "convinced that each must be judged on its own particular facts."

These pronouncements came in Division 5's report in No. MC-C-246, Transportation Activities of Brady Transfer & Storage Co. This is the proceeding in which the division issued a "tentative report" in December, 1944, and invited interested parties to submit their views on the question of what constitutes a regular-route trucking service in contradistinction to an irregular-route operation.

As noted in the *Railway Age* of December 30, 1944, page 1007, the tentative report pointed up that question in a discussion of practices "which tend to serve as criteria" of the character of regular-route operations. These include a predetermined plan of operations; the movement in significant amounts of a particular type of traffic; solicitation; maintenance of terminals; adherence to fixed routes; marked or constant periodicity of service; and observance of definite schedules or their equivalent.

In the present report, Division 5 again discusses these practices in the light of the presentations made by interested parties. Such discussion leads to the aforementioned conclusion that no general rule can be laid down. "Throughout our discussion," the report said, "we have repeatedly emphasized, and we do so again now, that none of the indicia, except possibly the observance of definite published schedules, is standing alone necessarily conclusive. On the other hand, an operation marked or

characterized by any substantial number of them in combination, particularly some of them, permits of only one classification."

Meanwhile the commission had asserted its power to classify truckers into regular- and irregular-route carriers, thus dismissing contentions that it lacked such power. As for Brady Transfer, the respondent, the commission found that it has been conducting unauthorized regular-route operations between St. Paul, Minn., and Minneapolis and Fort Dodge, Iowa, and Spencer, thus deciding the case's "narrow issue" in which, the report said, "virtually no one, except the respondent itself, is particularly interested."

C. P. A. Will Receive Progress Reports on Car Program

Periodic reports on the progress made by freight car builders in obtaining steel, lumber and other components "will serve as a basis for informal action through which the Civilian Production Administration will support a program for producing 7,000 new freight cars monthly," said a C. P. A. announcement of February 14.

The reporting system was set up at last week's meeting of the Freight Car Builders Industry Advisory Committee. C. P. A.'s report of the meeting read as follows:

"Since the steel industry has promised to provide steel for freight cars, each builder should set his own level of production on the basis of his ability to negotiate with the steel producers, committee members decided.

"While commending the steel industry's promise to deliver 165,000 tons of steel monthly in order to double the present domestic freight car deliveries and accelerate repairs, car builders expressed some doubt as to their ability to increase the output immediately. They agreed, however, that appreciable results would be attained by the end of the second quarter of 1947.

"C.P.A. officials pointed out that the steel industry program does not become fully operative until April, although some steel company officials promised to provide as much assistance as possible to the program in March. They also promised the car builders some informal C.P.A. assistance in obtaining lumber, insulation and other hard-to-get items.

"The steel product classification of the 165,000 tons promised monthly by the steel industry is approximately as follows: Plates, 63,000 tons; shapes, 37,000 tons; bars, 24,000; sheets, 22,000; axles, 12,500; pipe, 3,600 and billets, 2,700 tons. Approximately 102,000 tons monthly of this amount is for new cars and the rest for repairs, maintenance and operating supplies."

House Votes $130,000 to Keep O. D. T. Until June 30

The House on February 18 passed H.R. 1968, the so-called "urgent deficiency appropriation bill" which carries an additional $130,000 for the Office of Defense Transportation for the current fiscal year ending next June 30. This was a reduction of $13,000 from the $143,000 requested by President Truman.

The reduction was made by the House committee on appropriations which reported the bill on February 17. O. D. T. had previous fiscal 1947 appropriations totaling $587,000 with which it had been scheduled to wind up its affairs on April 30.

"The committee on appropriations," its report said, "regrets the necessity for extending the life of any of the war agencies a single day, but is confronted with the failure of the Civilian Production Administration and the War Assets Administration to meet their obligations in the production and allocation of steel and, therefore, must keep another agency alive long enough to put the country's transportation system in position to meet the requirements of business. Any failure in this respect would delay the very rapid and noteworthy conversion to a peacetime economy which private business is accomplishing."

With the reporting of the bill, the committee made public testimony presented by O. D. T. Director J. Monroe Johnson when he appeared in support of the proposed appropriation at February 11 hearings. Colonel Johnson there told again his story about the current freight-car shortage, and how he and his staff are "fighting tooth and nail, and have been fighting for years for more cars." The O. D. T. needed the appropriation, Colonel Johnson said, because it is "doing more railroading today than at any time during the war." And the railroads, he added, "are doing better railroading today than they have ever done before with very many fewer cars and the scarcity of cars is growing day by day." O. D. T.'s present force consists of 63 full-time employees of its own, and 40 field agents of the Interstate Commerce Commission's Bureau of Service and three stenographers paid out of its appropriation.

Car Service Orders

Because the movement of import and export freight through the port of New York "is overtaxing the lighterage facilities and causing a shortage of lighterage equipment at that port," the Interstate Commerce Commission has issued Service Order No. 684 which prohibits railroads from performing lighterage service there except on 48-hours notice. The order became effective February 17, and is scheduled to expire April 17.

It stipulates that no common carrier or its lighterage agent, serving the port of New York, shall accord lighterage delivery of freight (except perishable) to a steamship within the port's lighterage limits when the lighterage order "requires or requests lighterage delivery before the expiration of 48 hours from the hour of receipt of such order in the railroad's lighterage office." G. C. Randall, 30 Vesey street, New York, is appointed I. C. C. agent under the order with authority to restrict lighterage service in accordance with specific directions.

The directions stipulate that Mr. Randall shall prohibit by order any road from performing any further lighterage delivery to any steamship when such ship as of 7:00 a.m. on any week day has held five or more loaded or partially loaded lighterage vessels "longer than 48 hours (Sundays and holidays excluded) for two consecutive days (Sundays and holidays excluded), providing such equipment was placed on or after the date and time specified in the lighterage order." Any order issued by Mr. Randall pursuant to the foregoing is to be canceled as of 7.00 a.m. any day the number of lighterage vessels held over 48 hours has been reduced below five for the specific steamship.

Service Order No. 648 providing car-supply priority for foreign-relief grain and requiring permits for other carload shipments of grain at specified western markets, has been further modified by Amendment No. 4 which extends the coverage to six additional points — Copeland, Kans., Dodge City, Wellington, Sikeston, Mo., Lincoln, Nebr., and Woodward, Okla.

Five orders which would have expired this week or next have been amended to set back their expiration dates until June 30. They are: No. 82, which requires joint use of terminals within the Louisville, Ky., switching district; No. 104 (fourth revised), which provides for the substitution of RS type refrigerator cars for box cars ordered for westbound transcontinental carload shipments; No. 394, which restricts the free time on refrigerator cars; No. 396, which requires the reconsignment of refrigerator cars within 48 hours from 7:00 a.m. after arrival at a diversion point; No. 436, which requires railroads to pull empty refrigerator cars within 24 hours after unloading and to forward promptly to loading territory.

Director Johnson of the Office of Defense Transportation has amended his recently-issued Special Allocation Order ODT R-1 to reduce from 190 to 84 the number of cars which tank-car owners are required to make available, by lease, to chemical companies having Army-owned tank cars in their service. The 94 cars are to be converted and made available to the War Department for the transportation of ammonium nitrate solution in connection with the Army fertilizer program, thus permitting retention by the chemical companies of 249 (instead of 318 as shown in the original order) Army-owned cars which are now being used by such companies for the transportation of sulphuric acid.

C. & O.'s Purcell Recommends Changes in Reed Bill

Complying with a promise he made when testifying before the Senate committee on interstate and foreign commerce on February 4, as reported in *Railway Age*, February 8, page 336, Robert W. Purcell, vice-president, law, of the Chesapeake & Ohio, has recommended modifications in the language of S.110, the bill introduced by Senator Reed, Republican of Kansas, to stay the operation of anti-trust laws with respect to carrier rate-making procedures and other joint actions approved by the Interstate Commerce Commission.

The changes proposed by Mr. Purcell are calculated to throw additional safeguards around the bill's grant of immunity to commission-approved agreements on such matters as time schedules, interchange of facilities, settlement of claims, promotion of safety, and promotion of adequacy, economy, or efficiency of operation or service. To that end he would stipulate that "any" agreement concerning these matters would come under I. C. C. scrutiny; and he would provide that commission approval of such an agreement "shall not be deemed to be approval of any subsequent modification or amendment thereof or of any supplemental or other agreement made pursuant to any provision contained in the original agreement."

Mr. Purcell's proposals were embodied in a letter wherein he explained that they were designed "to make certain that this legislation would not grant immunity from the anti-trust laws to carriers entering into

agreements relating to matters other than rates under conference procedures approved by the . . . commission, unless such agreements were also specifically approved by the commission." At the same time, he feels that, even as so modified, the bill "would act as a deterrent upon competition among carriers." He added, however, that if the committee disagrees with this view he "most heartily" recommends incorporation of the suggested modifications.

Mr. Purcell said further that it was his "firm conviction" that constant developments and resulting benefits in transportation can best be assured by the stimulation of individual initiative through the prohibition or discouragement of joint action among carriers that tends to restrict competition. He conceded that "some agreements" are necessary for the "continued development" of the nation's integrated rate structure and that "complete prohibition of joint action in this field" would "freeze rather than promote" the development of the rate structure.

"I think that the public interest would best be served by the enactment of legislation not only removing all doubt as to the legality of rate conference activity, but also requiring simplified procedures to expedite the handling of rate proposals, and preserving competition in rate making to the extent that competition is consistent with the establishment of rates, rate adjustments and rate relationships that are reasonable and that avoid undue discrimination, preference or prejudice," he said in part.

"I do not understand that the anti-trust laws prohibit carriers from discussing . . . their operating, engineering and other problems or from entering into agreements or taking other joint action respecting such matters which do not restrain trade or commerce," he continued. "It is my considered opinion that no additional legislation is necessary to define the sphere within which carriers may collaborate on such matters or to afford them adequate protection against Sherman act prosecutions for such collaboration."

I. C. C. Receives Many Protests Against Geneva Steel Rates

The Interstate Commerce Commission was this week receiving protests from steel companies and others against the so-called Geneva steel rates which were at the same time being supported in telegrams and other communications coming to the commission from Pacific-coast steel users. The rates are those proposed by certain western roads for movements to Pacific-coast destinations from Geneva, Utah, where the Geneva Steel Company, a United States Steel Corporation subsidiary, operates the steel mill formerly owned by the government.

The proposed rates, which are contained in tariffs filed with the commission and scheduled to become effective March 1, would be 48 cents per 100 lb. to San Francisco, Calif., Los Angeles, and Portland, Ore., and 54 cents per 100 lb. to Seattle, Wash.—reductions of 22 cents under respective "normal" rates of 70 cents and 76 cents. However, the proposed rates are higher by the amount of the Ex Parte 162 increases than rates accorded the government when the Geneva plant was operated for its account during the war.

Henry J. Kaiser, president of Kaiser Company, which operates a steel plant at Fontana, Calif., carried his protest to the public in a February 18 press release which charged that the proposed rates "would grant the United States Steel Corporation an exclusive subsidy of $1,200,000 or more annually at the expense of western consumers and manufacturers." Benjamin F. Fairless, president of U. S. Steel, replied the same day in a statement which asserted that the proposed rate cut would benefit the Geneva Steel Company's Pacific-coast customers and not the company; for the customers' delivered cost of steel "will be reduced by the amount of such freight reduction."

Protests received by the commission, in addition to that of the Kaiser Company, include those of the Bethlehem Steel Company, Republic Steel Corporation, Youngstown Sheet & Tube Co., Colorado Fuel & Iron Corp., Sheffield Steel Corporation, and Intercoastal Steamship Freight Association.

"Inch" Pipe Lines Sold for Transport of Gas

The War Assets Administration announced on February 14 that it had approved sale of the Big Inch and Little Big Inch pipe lines to the Texas Eastern Transmission Corporation which will use them for the transmission of gas to the eastern seaboard. Texas Eastern's bid of $143,127,000 was the highest of six received by W. A. A.

Opposes Rail-Rate Rule of Anti-Monopoly Bill

(*Continued from page 421*)

Many Comments—The late O. Max Gardner, who wrote in his former role of acting secretary of the treasury, suggested that the uniform-rate proposals might well be referred to the President's Council of Economic Advisers. Attorney General Clark called attention to the limitation of the bill's uniform-rate provisions to class rates, whereas the I. C. C. "has found that less than 5 per cent of the total volume of carload freight traffic now moves under class rates." Thus Mr. Clark suggested that consideration be given to amendments which would extend the coverage to commodity and exception rates.

Lowell B. Mason, acting chairman of the Federal Trade Commission, confined most of his comment on Title III to so-called "phantom freight," collected by industries pricing on an f.o.b. basis. He summed up F.T.C.'s position as follows: "Although subscribing to the general proposition that discriminatory freight rates should be eliminated and pointing out that price discrimination on a commodity quoted at identical delivered prices may complement and complicate freight-rate discrimination, the commission does not feel that it is competent to offer suggestions as to ways and means of eradicating discrimination in freight rates."

Mr. Mason also addressed himself to the bill's Title VIII, which would direct the President to make regular reviews of the operations of the various regulatory agencies, and to issue to them such directives as he may deem necessary to "curtail or correct" such policies as he ascertains "may fail to protect the public interest effectively against monopoly or monopolistic practices." As he reads this along with other sections of the bill Mr. Mason thinks it "raises again the question of the correct relationship between Congress, the independent commissions now responsible to Congress, and the executive branch of the government." It would, he added, authorize the President to make the commissions "directly responsible to him, instead of to Congress."

Congressional Labor Committees Hear Lyon and McNear

A. E. Lyon, executive secretary of the Railway Labor Executives' Association, appeared February 18 before the Senate committee on labor and public welfare to urge that care be taken to insure that employees and employment subject to the Railway Labor Act are exempt from the provisions of any general labor legislation which the committee may approve. On the same day George P. McNear, Jr., president of the Toledo, Peoria & Western, appeared before the House committee on education and labor to recommend Railway Labor Act amendments, including one which would make "more definite provision for impartial emergency boards in the event of serious disputes."

Mr. Lyon said that R. L. E. A.'s examination of the various bills on which the Senate committee was holding hearings led to the conclusion that "the general thought" has been to exempt matters subject to the Railway Labor Act. At the same time he wanted to be sure that this thought was carried out, since some doubt might arise in the absence of specific exemption provisions. "We do not believe," he said, "that any amendment to railroad labor legislation along the lines of any of the bills in question is justified at this time. No amendment to that specialized legislative system should be attempted unless upon careful and special investigation of the system in this country, its history and its operation."

Want Special Status Kept—Meanwhile, Mr. Lyon had traced the evolution of the Railway Labor Act and other special legislation affecting railroad employees, such as the Railroad Retirement and Railroad Unemployment Insurance acts, thus pointing up his contention that railroad employment "is governed as to almost all of its phases by an integrated body of special laws," which have grown up over a period of years "in response to special problems existing within the railroad industry, the long history of organized employer-employee relations in that industry, the difficulties inherent in any attempt at regulation by the several states, and the vital nature of the service performed."

Existing statutes dealing with labor problems in the railroad industry, Mr. Lyon also said, "have been outstandingly successful in the prevention of interruptions to the free flow of interstate commerce and the problems sought to be solved by [the committee] do not exist in the railroad in-

dustry." Previously he had pointed out that since the shopmen's strike of 1922, "there has been but one major work stoppage in the railroad industry, and this continued for only a short time." The latter was last May's nationwide strike by members of the Brotherhood of Locomotive Engineers and Brotherhood of Railroad Trainmen, whose chief executives are not members of R. L. E. A.

President McNear of the T. P. & W. traced for the House committee the history of the long-standing labor dispute on that road. "It was," he said, "our disinclination to be saddled with the wastes and delays of the so-called standard' or 'featherbed' rules in the operation of our own railroad, particularly in the time of war, that has been the root of the many difficulties we have experienced."

McNear Sums Up—With respect to the beginnings of the rules dispute in December, 1941, Mr. McNear recalled that no emergency board was appointed, although the road "repeatedly" asked the National Mediation Board to suggest to the President the appointment of an emergency board. "We were informed," Mr. McNear said, "that the reason why no emergency board was appointed in our case in 1941-42, was because the brotherhoods did not wish to have an emergency board investigation of the wastes and delays of the featherbed rules involved in that case." Meanwhile, the T. P. & W. management refused to arbitrate the dispute "because of the demonstrated partiality of the Mediation Board towards the brotherhoods during our long period of contact with that board, and because we could not conscientiously enter into a procedure that, obviously, would lead us into treasonable wastes and delays in time of war."

In addition to his call for Railway Labor Act changes to provide for "impartial" emergency boards, Mr. McNear suggested that, if it becomes the national policy to permit employers to discuss labor unions and their advantages and disadvantages with employees, the act should also be amended to give carriers the rights accorded to any other employer. He said further that the provision requiring the posting of notices regarding provisions of the Railway Labor Act on all bulletin boards, etc., should be eliminated unless similar posting is required of all other industries.

Representation of Employees

The Brotherhood of Railroad Trainmen has retained its right to represent yardmen, including foremen, helpers and switchtenders, employed by the Cincinnati, New Orleans & Texas Pacific (Southern system); yardmasters employed by the Missouri-Kansas-Texas and the M.-K.-T. of Texas; and road conductors employed by the Long Island, as the result of recent elections which have been certified by the National Mediation Board. The defeated challengers were, respectively, the Switchmen's Union of North America, the Railroad Yardmasters of America, and the Railroad Workers Industrial Division, District 50, United Mine Workers. As a result of other elections, however, the B. of R. T. was replaced by the R. Y. of A. as representative of yardmasters employed by the Port Terminal of Houston, Tex., and the Boston & Maine.

Train dispatchers employed by the Hudson & Manhattan who formerly were represented by the General Committee of the Monthly Rates Dispatchers are now represented by the American Train Dispatchers Association, while Norfolk & Portsmouth Belt Line maintenance of way employees (those below the rank of supervisor in the track department and general foremen in the bridge and building department but not including clerical employees in the signal, telegraph and telephone maintenance departments) who formerly were without representation are now represented by the Brotherhood of Maintenance of Way Employees.

On the Chicago & North Western the Joint Council Dining Car Employees, Hotel and Restaurant Employees International Alliance and Bartenders International League of America, American Federation of Labor, has extended its coverage of dining-car employees to include chefs, cooks, waiters-in-charge without stewards, waiters, stationary pantrymen, pantrymen, buffet car porters and bartenders. At the time of the election, dining-car cooks were represented by the Order of Railway Conductors; buffet-car porters were represented by the Brotherhood of Sleeping Car Porters; bartenders were not represented by any organization; and the remaining employees affected by the election were represented by the victorious union.

Retirement Benefits Certified Decline in November

Payments of retirement and death benefits certified to the Treasury amounted to $13,453,000 in November, a drop of $139,000 from the October figure, according to the Monthly Review of the Railroad Retirement Board. The largest decline—$84,000—was in lump-sum death benefits which fell to $661,000, the lowest monthly total since December, 1945.

New employee annuity applications received during November numbered 2,675, well below the October high of 3,300. The death of 197 pensioners was reported during the month, reducing the number of the rolls at the end of November to 14,852. The amount of the average pension in force was $59.49.

Although unemployment among railroad workers increased sharply near the end of November as a result of the coal strike, this increase was reflected little in unemployment insurance operations. The number of claims filed was 4.9 per cent smaller than in October and the number of benefit payments was 7.5 per cent lower. Railroad workers, who with but few exceptions were registering as unemployed for the first time in the benefit year, filed 20,664 applications for certificate of benefit rights during November.

Board field offices reported 5,907 placements, about four-fifths as many as in October. Fewer placements were reported for every board region except Dallas, Tex., with more than one-third of the net decline for the nation occurring in the Cleveland (Ohio) region. This was explained as caused largely by the drop in demand for track laborers on the part of one railroad in the Louisville, (Ky.) district. Little more than one-half as many openings were on file with board offices at the end of November as at the end of the preceding month.

No Interim Rate Relief for Water Carriers

The Interstate Commerce Commission has denied petitions filed by the Gulf-Intercoastal Conference and Luckenbach Steamship Company for an immediate and partial interim adjustment in transcontinental rail freight rates. The denial came in a February 10 order in Ex Parte No. 164, the proceeding in which the commission has water-competitive railroad rates and practices under investigation.

Another February 10 order, in Ex Parte No. 162, denied the same petitioners the similar relief they sought through a modification of the Commission's findings in that proceeding which resulted in the general railroad freight-rate increase that became effective January 1.

Eastern Car Foreman's Group Reelects Officers

G. H. Massy, superintendent motive power of the Central of New Jersey, was reelected president of the Eastern Car Foreman's Association at the recent annual meeting in New York. P. J. Hogan, supervisor car inspection and maintenance of the New York, New Haven & Hartford; W. N. Messimer, assistant superintendent equipment of the New York Central; T. G. Case, general car foreman of the New York Central; and Wilson P. Dizard of the American Car and Foundry Company, were reelected, respectively, first vice-president, second vice-president, treasurer and secretary.

Supply Trade

Lyle I. Martin, chief engineer of the **Morden Frog & Crossing Works,** Chicago, has been appointed vice-president in charge of engineering, with the same headquarters.

Frank A. Streiff has been appointed assistant vice-president in the sales department of the Southern Wheel division of the **American Brake Shoe Company,** with headquarters in Portsmouth, Va. He was formerly southeastern sales manager for the Southern Wheel division and sales representative for the brake shoe and castings division.

Daniel E. Noble has been appointed vice-president in charge of the communications and electronics division of the **Motorola Chicago Company,** a subsidiary of the Galvin Manufacturing Company. He formerly served as general manager of that division.

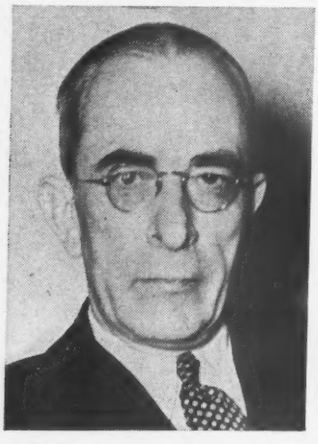
Dennis L. McElroy, chief engineer since 1923 of the Consolidation Coal Company of West Virginia, a subsidiary of the

Pittsburgh Consolidation Coal Company, has been elected vice-president in charge of engineering of the parent company, and **Joseph Pursglove, Jr.,** has been elected vice-president in charge of a newly-established research and development division.

Thomas C. Phillips has been elected vice-president in charge of sales of the **Pittsburgh Steel Products Company,** a

Thomas C. Phillips

subsidiary of the Pittsburgh Steel Company. **Robert L. Glose** was elected general manager of sales for the subsidiary,



Robert L. Glose

which will be the marketing division for the parent firm's construction products.

Fritz B. Ernst, whose retirement as vice-president in charge of sales of **American Steel Foundries,** with headquarters at Chicago, was reported in the *Railway Age* of February 1, was graduated in 1900 from Purdue University with a degree in civil engineering. He subsequently joined the editorial staff of *Railway Age,* in which capacity he remained until 1902, when he accepted a position at Purdue as instructor in car design, locomotive design, railway mechanical engineering and locomotive operation. Following four years as an instructor, he joined the Fitzhugh-Luther Company, at Hammond, Ind. In 1906, he became associated with the American Steel Foundries as sales engineer and salesman for miscellaneous steel castings, with headquarters at New York. Five years later he went to Chicago, where he became assistant to the vice-president

Fritz B. Ernst

in charge of sales. In 1929 he was advanced to vice-president in charge of sales, which position he held until his retirement on February 1, 1947.

George W. Marshall, Jr. has been appointed general sales manager of the asbestos products division of **Raybestos-Manhattan, Inc.,** with headquarters in Chicago. Mr. Marshall will continue as general manager of the asbestos textile and packing division and in addition will direct the sales activities of the equipment sales division.

Herbert M. Lewis, whose retirement as vice-president and general manager of the **Durametallic Corporation of New Jersey,** was reported in the *Railway Age* of January 11, was born in 1878, at Montgomery, N. Y., and received his higher education at business school in Newburgh, N. Y., and with the International Corre-

Herbert M. Lewis

spondence School of Scranton, Pa. He began his career as a machinist in a Brooklyn (N. Y.) bicycle shop, and later entered the employ of the New York, Ontario & Western as a machinist at Middletown, N. Y. He subsequently moved to Rome, N. Y., where he was promoted to machine shop inspector for the road. Mr. Lewis later became an inspector of locomotives for the Interstate Commerce Commission, assigned to the Pittsburgh (Pa.) district. In 1924 he left the I. C. C. and became associated with the Universal Packing Corporation of Pittsburgh, which later moved its office to Newark, N. J., and became the firm of which he was vice-president and general manager at the time of his retirement.

Luminator, Inc., Chicago, has announced the addition to its staff of **Henry J. Van Dellen,** formerly general car

Henry J. Van Dellen

inspector on the Alton. Mr. Van Dellen started his railroad career with the Chicago & North Western in 1922. He subsequently was associated with the Atchison, Topeka & Santa Fe, the General American Transportation Corporation and the Union Tank Car Company. In 1928, he returned to the Chicago & North Western, where he served as shop engineer in the development of car lighting, air conditioning and modernization of railroad passenger cars.

B. T. Cowherd has been elected vice-president in charge of the **Republic Drill & Tool Co.'s** hardware sales in the eastern states, with headquarters in New York. Mr. Cowherd was formerly associated with the B. F. Goodrich Company for 22 years and just before joining Republic Drill & Tool was deputy zone administrator of the War Assets Administration in Chicago.

OBITUARY

A. K. Hohmyer, western manager of the Westinghouse Air Brake Company, with headquarters at Chicago, died at the Henrotin hospital in that city on February 11.

Joseph Foard Gettrust, sales representative for the Ashton Valve Company, with headquarters at Chicago, died at his home in that city on February 11, following a short illness. Mr. Gettrust was secretary of the Allied Railway Supply Association, and a past president of the Railway Equipment Association and the Air Brake Appliance Association. He began his career with the Cincinnati, Indianapolis, St. Louis & Chicago (now Cleveland, Cincinnati, Chicago & St. Louis), and had been associated with the Ashton Valve Company for 35 years.

Equipment and Supplies

Milwaukee to Spend 48 Million

A $48,900,000 budget for improvements to roadway and existing equipment, and for new equipment—more than double that of 1946—has been approved for the Chicago, Milwaukee, St. Paul & Pacific, H. A. Scandrett, president of the road, announced last week. As part of the program, the Milwaukee is inquiring for the following Diesel-electric locomotives: four 2,000-hp. passenger; five 1,000-hp. switching; and 11 1,500-hp. combination road and switching locomotives. A total of 3,419 freight cars are scheduled to be built at the road's shops at Milwaukee, Wis.

LOCOMOTIVES

The purchase of three 660-hp. Diesel locomotives at a cost of $212,000 was authorized for the NEW ORLEANS & LOWER COAST (owned by the Missouri Pacific) at a board of directors meeting of the M. P. last week. The new Diesels will replace four steam locomotives which have been in service for more than 50 years, and will completely Dieselize the 60-mile road.

FREIGHT CARS

The ATCHISON, TOPEKA & SANTA FE is inquiring for 500 50-ton automobile cars.

CONSOLIDATED CHEMICAL INDUSTRIES has ordered 10 100-ton tank cars from the American Car and Foundry Company.

The GULF COAST LINES (Missouri Pacific system) have ordered 50 50-ton auto cars from the system shops.

The PACIFIC GAS COMPANY has ordered 50 40-ton tank cars from the American Car and Foundry Company.

The SHIPPERS CAR LINE has ordered 120 50-ton tank cars from the American Car and Foundry Company.

The HOME GAS CORPORATION has ordered 3 50-ton tank cars from the American Car and Foundry Company.

The MONSANTO CHEMICAL COMPANY has ordered 14 70-ton tank cars from the General American Transportation Corporation.

The ST. LOUIS REFRIGERATOR CAR COMPANY has ordered 50 40-ton refrigerator cars from its own shops.

The ADIRONDACK BOTTLED GAS CORPORATION has ordered 3 50-ton tank cars from the American Car and Foundry Company.

The MISSOURI PACIFIC has ordered 600 50-ton auto cars, 50 70-ton covered hopper cars and 50 50-ton gondola cars from its own shops.

The SPOKANE INTERNATIONAL has ordered two 70-ton covered hopper cars from the General American Transportation Corporation.

The GENERAL AMERICAN TRANSPORTATION CORPORATION has ordered 10 70-ton tank cars, 40 50-ton tank cars, 60 40-ton tank cars, 4 70-ton covered hopper cars and 10 40-ton covered hopper cars from its own shops.

The WABASH has ordered the rebuilding of 200 55-ton hopper cars and 233 40-ton box cars in its Decatur, Ill., shops during 1947.

The INTERNATIONAL-GREAT NORTHERN (Missouri Pacific system) has ordered 50 50-ton covered hopper cars, 50 50-ton auto cars and 50 40-ton stock cars from the system shops.

The NORFOLK & WESTERN has ordered 100 70-ton covered hopper cars from its own shops at Roanoke, Va. The inquiry for this equipment, which will cost more than $500,000, was reported in last week's *Railway Age*.

The WABASH has ordered 500 50-ton 40½-ft. steel box cars from the American Car and Foundry Company. The inquiry for this equipment was reported in the *Railway Age* of February 15.

The DETROIT, TOLEDO & IRONTON has ordered 200 50-ton 40½-ft. steel box cars from the American Car & Foundry Company. This is part of the equipment for which the road has been inquiring, as reported in the *Railway Age* of August 31, 1946.

PASSENGER CARS

The ATLANTIC COAST LINE has ordered 50 50-ton passenger express refrigerator cars from the American Car and Foundry Company. Between the end linings, the inside length of each car will be 50 ft.

The order for 15 coaches placed by the ALTON with the American Car and Foundry Company in July, 1945, has been changed to call for 11 coaches and 4 parlor cars.

SIGNALING

The ELECTRO-MOTIVE DIVISION of the General Motors Corporation has ordered 22 sets of intermittent inductive train control equipments from the General Railway Signal Company, to be installed on Diesel-electric freight locomotives for the New York Central.

The CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA has placed an order with the General Railway Signal Company for equipment to install an all-relay electric interlocking at East St. Paul, Minn. The 12-in. by 17-in. control panel will have 17 track indication lights and 11 levers for the control of 10 switch machines and 13 signals. Type B plug-in relays, Type SA searchlight signals, and Model 5D electric switch machines will be used in this project.

The WESTERN MARYLAND has placed an order with the Union Switch & Signal Co. for the signal material required to install an electro-pneumatic interlocking at Emory Grove, Md. The material includes a "TC" table interlocking machine, Style A-21 dual-control, electro-pneumatic switch and lock movements, Style R-2 and N-2 color-light signals, as well as the necessary relays, transformers and housings. The installation work will be handled by the railway's regular construction forces.

The CHICAGO, BURLINGTON & QUINCY has placed an order with the Union Switch & Signal Co. covering the signal material required for the installation of centralized traffic control between Quincy, Ill., and Mark, Mo., a distance of seven miles. Style C control machines will be located at Quincy, and West Quincy, Mo. In addition to the control machines the order includes Style H-2 searchlight high and dwarf signals, Style M-22B dual-control electric switch layouts, Style SL-6A electric switch locks, office and field time code equipment, housings, relays, rectifiers and transformers. The railroad will handle the installation.

The LOUISVILLE & NASHVILLE has ordered materials from the General Railway Signal Company for the installation of an all-relay electric interlocking at Henderson, Ky. The desk-type control machine will have an 18-in. by 36-in. panel, equipped with 16 track indication lights and 15 levers for the control of 4 electric switch machines, 6 electric switch locks, 2 spring switches, and 15 signals. Model 5C electric switch machines, Type K relays, Model 9A electric switch locks, Type SA high and dwarf signals, and welded steel instrument houses will be used on this project.

Construction

CHICAGO, INDIANAPOLIS & LOUISVILLE.—An expenditure of more than $1,500,000 for property improvements has been authorized by the board of directors of this road, John W. Barriger III, president, announced this week. The improvements, with their approximate costs, include the following: $805,000 for laying 57 miles of 112-lb. rail; $200,000 for conversion of part of the road's steam locomotive shop at Lafayette, Ind., to facilitate the repair of Diesel locomotives; $200,000 for improvements of the communication system; and $100,000 for new interlocking facilities.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Included in this road's budget of nearly $49 million for improvements in 1947 is $6,390,367 for rail, track fastenings and ballast, and $2,505,161 for replacing, renewing and strengthening bridges. Modernization and the improvement of shop facilities at Milwaukee, Wis., will be completed, to include the construction of a new passenger car shop building, and to provide forging and steel fabricating facilities, together with new covered craneways and necessary changes in tracks and roadways. The road will continue the program started in 1943 for the installation of centralized traffic control, and will install radio communication equipment on certain

locomotives and cabooses and in six telegraph offices. Additional yard and industrial trackage is to be provided in the Chicago area, at Milwaukee, at St. Paul, Minn., and elsewhere. Proposed also is the construction of new freighthouses at Chicago and Minneapolis, Minn., two warehouses at Seattle, Wash., and a warehouse at Butte, Mont.

NORTH KANSAS CITY BRIDGE & RAILROAD.—Acting upon a request of the applicant in the Finance Docket No. 12615 proceeding, Division 4 of the Interstate Commerce Commission has dismissed this road's 1939 application which sought commission approval of a plan to construct 5,200 ft. of overhead crossings and approaches and approximately 2 miles of switching and industrial tracks in North Kansas City, Mo.

Abandonments

CENTRAL OF NEW JERSEY.—Division 4 of the Interstate Commerce Commission has authorized this road to abandon a one-mile portion of its so-called Eatontown branch. The segment was used to serve Army facilitites at Ft. Monmouth, N. J., now served through Branchport.

CHICAGO GREAT WESTERN.—This road has applied to the Interstate Commerce Commission for authority to abandon a 3.9-mile line between Sycamore, Ill., and DeKalb, where it proposes to acquire trackage rights over a parallel line of the Chicago & North Western.

CHICAGO & NORTH WESTERN.—This road has applied to the Interstate Commerce Commission for authority to abandon a 6.2-mile branch line and about ½-mile of wye track located in Lincoln and Langlade counties, Wis.

MANISTEE & NORTHEASTERN. — This road has applied to the Interstate Commerce Commission for authority to abandon 1,087 ft. of its main line in Manistee, Mich., where it proposes to acquire trackage rights over parallel tracks of the Pere Marquette.

MINNEAPOLIS & ST. LOUIS.—This road has applied to the Interstate Commerce Commission for authority to abandon those portions of its line extending from St. James, Minn., to Estherville, Iowa, 40.7 miles; from Corwith, Iowa, to St. Benedict, 7.3 miles, and from Lynnville Junction, Iowa, to Lynnville, 2.6 miles.

PENNSYLVANIA—READING.—In a joint application filed by these roads with the Interstate Commerce Commission, the Pennsylvania seeks authority to abandon its Shenandoah branch, extending 4.5 miles from a connection with the Reading at Frackville Junction, Pa., to a connection with the P. R. R.'s Girardville branch at Shenandoah, while the Reading seeks commission authority to abandon operation under trackage rights over that portion of the P. R. R.'s Shenandoah branch from Frackville Junction to Boston Run Junction, 2.5 miles.

PITTSBURG COUNTY.—This road has applied to the Interstate Commerce Commission for authority to abandon its entire line, the main segment of which extends 18.44 miles from McAlester, Okla., to Hartshorne. The applicant said that operation of the line is unnecessary for public convenience and that revenues are insufficient to justify further operations.

SMOKY MOUNTAIN. — The Railroad & Public Utilities Commission of Tennessee has asked the Interstate Commerce Commission to issue a summary order requiring "immediate action" on the part of this road toward repairing its roadbed, which was recently damaged by a storm, in order that operations may be resumed on its 29-mile line between Vestal, Tenn., and Sevierville. The petition also seeks an I. C. C. investigation concerning the cessation of operation by the road which notified the Tennessee commission on January 22 that all service had been "temporarily discontinued." Later, according to the petition, the road further advised that it would cost "thousands of dollars" to repair the roadbed, and it saw "no way in which the repairs could be financed."

SOUTHERN PACIFIC.—This road has applied to the Interstate Commerce Commission for authority to abandon operation of its so-called Keswick branch between Redding, Calif., and Coram—13.4 miles of line of which 12.8 miles is owned by the United States government and 0.6 miles by the Central Pacific, the latter being a joint applicant seeking authority to abandon its portion. The application states that the government has given the S. P. notice of cancellation of the operating contract, since the government-owned segment will be removed as part of the plant to construct the Central Valley Project's Keswick dam.

Financial

CENTRAL OF GEORGIA. — *Acquisition of Leased Lines.*—The trustee of this road has asked the Interstate Commerce Commission to authorize the acquisition of three leased lines which would be merged into the reorganized C. of Ga. under present provisions of the approved plan of reorganization. The lines are the South Western, Augusta & Savannah, and Chattahoochee & Gulf. The trustee's petition said that merger or consolidation would be "more cumbersome" than the proposed purchase arrangement, which would leave the lessors in a position to liquidate their assets. Also, the laws of Georgia are "better adapted to the method of purchase."

CHICAGO GREAT WESTERN.—*Trackage Rights.*—This road has applied to the Interstate Commerce Commission for approval of arrangements whereby it would acquire trackage rights over 3.7 miles of Chicago & North Western line between Sycamore, Ill., and DeKalb, meanwhile abandoning a parallel line of its own.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA. — *Equipment Trust Certificates (Correction).* — The item in the *Railway Age* of February 8, page 339, which reported the Interstate Commerce Commission's approval of this road's $1,020,000 issue of equipment trust certificates, stated erroneously that $580,000 was the estimated cost of each of the four 2,000-hp. Diesel-electric locomotives to be acquired from Fairbanks, Morse & Co. The correct unit-cost figure is $204,350.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Annual Report.*—Operating revenues of this road in 1946 amounted to $938,188, compared with $926,776 in the preceding year. Operating expenses were $756,815, compared with $640,606. Fixed charges were $16,968, compared with $19,182. Net income was $117,713, compared with $119,082.

Judson Zimmer, president, said in the annual report that the road had purchased a second 1,000-hp. Diesel-electric locomotive as another step toward its goal of complete Dieselization.

GALVESTON, HOUSTON & HENDERSON.—*Notes.*—This road has applied to the Interstate Commerce Commission for authority to issue serial collateral notes in the aggregate amount of $1,672,000 for which liability would be assumed by three roads joining in the application—the Missouri-Kansas-Texas, M-K-T of Texas and International-Great Northern. The proceeds would be used to refund a loan in like amount from the Reconstruction Finance Corporation. The R. F. C. has been collecting 4 per cent interest on the loan, and the applicant has accepted, subject to commission approval, the bids of three Houston, Tex., banks which have agreed to pay par for the proposed refunding notes bearing a 3 per cent interest rate. Authority is also sought to pledge as collateral with the banks the $2,801,500 of G. H. & H. first mortgage 4 per cent bonds now pledged with R. F. C.; and to amend present trackage-rights agreements so that I.-G. N. and M-K-T payments thereunder will conform to the proposed new financing. The new series would consist of 20 notes of varying principal amounts, one maturing every six months over a 10-year period from the date of issue.

MANISTEE & NORTHEASTERN. — *Trackage Rights.*—This road has applied to the Interstate Commerce Commission for approval of arrangements whereby it would acquire trackage rights over 1,266 ft. of Pere Marquette tracks in Manistee, Mich., meanwhile abandoning parallel trackage of its own.

MISSOURI-KANSAS-TEXAS. — *Equipment Trust.*—Halsey, Stuart & Co. of Chicago, was the successful bidder on a $3,900,000, 15-year equipment trust issue of this road. The successful bid carried a price of 99.129, with a dividend rate of 2 per cent, making the average cost to maturity of 2.10887 per cent. The proceeds will cover 80 per cent of the cost of the cars for the new "Texas Special" and seven Diesel-electric freight locomotives. (See the *Railway Age* for February 1.)

NEW YORK, CHICAGO & ST. LOUIS.—*Equipment Trust Certificates.*—Division 4

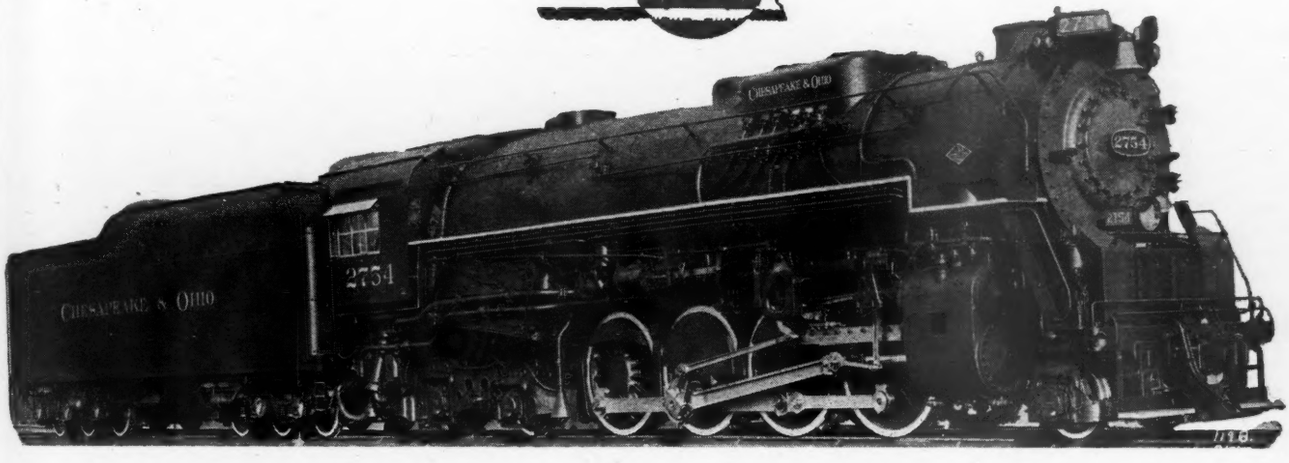
News Department continued on next left-hand page

10 more...

LIMA-BUILT 2-8-4's

for

THE C AND O



The Chesapeake & Ohio, in keeping with its policy of modern power to keep abreast of modern traffic conditions, has recently augmented its fleet of 2-8-4's.

These 10 locomotives, like the other Lima-built steam power in use on the C & O, will be used to haul heavy payloads at the sustained speeds that modern operational requirements demand.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

of the Interstate Commerce Commission has authorized this road to assume liability for $1,000,000 of 1⅝ per cent epuipment trust certificates, the proceeds of which will be applied toward the purchase of 14 1,000-hp. Diesel-electric standard switching locomotives at a total cost of $1,253,000. The certificates will mature in 10 equal installments, starting February 15, 1948. The report also approves a selling price of 99.059, the bid of Halsey, Stuart & Co. associates, on which basis the average annual cost will be approximately 1.81 per cent.

NORWICH & WORCESTER.—*Bonds.*—This road, operated under lease by the New York, New Haven & Hartford, has sold, subject to Interstate Commerce Commission approval, $1,800,000 of first mortgage bonds due in 1967 to Adams & Peck. Proceeds from the sale of the bonds, which were reoffered to the public at 101, will be used to refund a like amount of 4½ per cent bonds due March 1.

SEABOARD AIR LINE.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $3,000,000 of Series A equipment trust certificates, the proceeds of which will be applied toward the purchase of equipment, estimated to cost $4,077,200, as outlined in *Railway Age,* January 25, page 252. The certificates will mature in 10 equal annual installments starting February 1, 1948. The report also approves a selling price of 99.52 for the certificates bearing a 1¾ per cent interest rate, the bid of Shields & Co. and Bear, Stearns & Co. and associates, on which basis the average annual cost will be approximately 1.84 per cent.

WHEELING & LAKE ERIE.—*Equipment Trust Certificates.*—This road has sold $1,680,000 of serial equipment trust certificates maturing from September 1, 1947, to March 1, 1957, inclusive, to Halsey Stuart & Co. and associates on a bid of 99.419 for a 1½ per cent interest rate. The certificates were reoffered to the public at prices yielding from 0.90 per cent to 1.75 per cent, according to maturity. (See the *Railway Age* for February 1, page 294.)

Average Prices Stocks and Bonds

	Feb. 18	Last week	Last year
Average price of 20 representative railway stocks .	51.57	52.86	62.28
Average price of 20 representative railway bonds..	92.46	93.35	102.26

Dividends Declared

Canadian Pacific.—75¢, payable March 31 to holders of record February 24.

Chesapeake & Ohio.—75¢, quarterly, payable April 1 to holders of record March 7.

Delaware & Bound Brook.—50¢, quarterly, payable February 20 to holders of record February 13.

Fort Wayne & Jackson.—5½% preferred, $2.75, semi-annually, payable March 1 to holders of record February 20.

North Pennsylvania.—$1.00, quarterly, payable March 10 to holders of record March 3.

Pittsburgh, Youngstown & Ashtabula.—7% preferred, $1.75, quarterly, payable March 1 to holders of record February 20.

Texas & Pacific.—$1.00; preferred, $1.25, quarterly, both payable March 13.

Virginian.—62½¢, quarterly, payable March 20 to holders of record March 10.

Railway Officers

EXECUTIVE

Ross B. Hager, whose appointment as assistant to vice-president in charge of traffic of the Baltimore & Ohio at Baltimore was reported in the *Railway Age*

Ross B. Hager

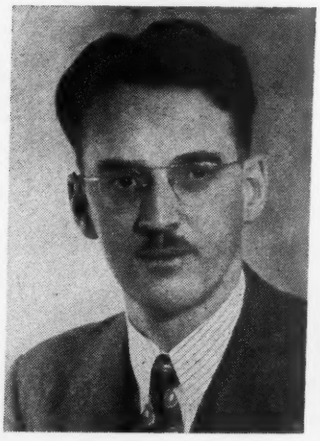
of February 8, entered the service of the Baltimore & Ohio as clerk in the freight traffic offices at Baltimore in August, 1914. Mr. Hager became stenographer in the same offices in November, 1915, and after filling various secretarial positions was promoted to secretary to the vice-president of freight traffic in March, 1925. He was promoted to assistant to chief clerk to vice-president of freight traffic in January, 1934, and was advanced to chief clerk to vice-president of freight traffic in February, 1941, holding the latter position at the time of his recent appointment as assistant to vice-president in charge of traffic.

B. W. Roberts, general purchasing agent of the Canadian Pacific system, with headquarters at Montreal, Que., has been

B. W. Roberts

appointed vice-president of purchases and stores, with the same headquarters. **E. C. Kerr,** chief clerk in the financial department, has been appointed assistant to the vice-president of finance.

Mr. Roberts was born at Winnipeg, Man., on August 17, 1890, and was educated at Winnipeg's Tuckwell's College. He joined the Canadian Pacific in 1907 as a clerk in the treasury department at Winnipeg and the following year he was transferred to the purchasing department at Vancouver, B. C. He was appointed assistant commissary agent at Winnipeg on May 1, 1912, and the following January he was promoted to commissary agent there. On May 16, 1913, he became assistant to chief commissary agent at Montreal and in December of the same year he was appointed assistant to general purchasing agent at Montreal. Mr. Roberts became purchasing agent at Calgary on July 1, 1917, returning to this position after service during World War I with the Royal Flying Corps from January to December, 1918. On June 1, 1919, he was transferred to Vancouver and on December 1, 1923, he became assistant general purchasing agent at Montreal, Mr. Roberts was promoted to general purchasing agent at Montreal on October 10, 1928, which position he held until his recent promotion to vice-president of purchases and stores. During World War II he was director of purchases in Canada for the Navy, Army and Air



E. C. Kerr

Force Institutes which supplied canteen needs of British service personnel.

Mr. Kerr was born at Montreal, where he attended high school. He entered the service of the Canadian Pacific in 1918 and has been in the financial department since that time, with the exception of two years. He has been chief clerk since 1934.

G. F. Potter, general freight agent of the Atlantic Coast Line, with headquarters at Wilmington, N. C., has been appointed assistant to vice-president, with the same headquarters.

P. J. Neff, president of the Missouri Pacific, has been elected president of the New Orleans & Lower Coast (a subsidiary of the M. P.), succeeding L. W. Baldwin, who died in May, 1946. Other M. P. officers elected vice-presidents of the company are: **George C. Stohlman,** executive representative at New Orleans, La.; **H. M. Johnson,** executive assistant at St. Louis, Mo.; **C. D. Peet,** chief accountant

News Department continued on next left-hand page

THE FRANKLIN AUTOMATIC FIREDOOR

Franklin Butterfly Firedoor No. 8.

The Franklin Butterfly Firedoor No. 8 is standard with most coal-burning railroads. It is available in sizes to meet all standard openings and stoker arrangements, and with a selection of foot-pedal types.

THE FRANKLIN RADIAL BUFFER

Franklin Radial Buffer, with cut-away portion showing spring which controls frictional resistance to compression.

The Franklin Radial Buffer effectively dampens and absorbs horizontal shake and vertical vibration of a locomotive. It eliminates all slack between engine and tender, yet allows complete freedom of movement between them. It can be applied to new or existing locomotives.

These Franklin products are used on locomotives handling the new Baltimore & Ohio *Cincinnatian*

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
AUTOMATIC FIRE DOORS • DRIVING BOX LUBRICATORS • STEAM GRATE SHAKERS • FLEXIBLE JOINTS • CAR CONNECTION

and financial officer at St. Louis; **R. C. White,** chief operating officer at St. Louis; and **E. Mock,** chief traffic officer at St. Louis.

OPERATING

L. T. Andrews has been appointed assistant to general superintendent transportation of the Atlantic Coast Line, with headquarters at Wilmington, N. C.

R. Workman, transportation assistant of the Ontario Northland, has been appointed superintendent of transportation, with headquarters at North Bay, Ont.

G. E. Mayne, assistant superintendent of the Sudbury division of the Canadian Pacific at North Bay, Ont., has been promoted to superintendent of the Trenton division, with headquarters at Toronto, Ont., succeeding **Leonard R. Bangs,** who has been transferred to the Farnham division as reported in the *Railway Age* of February 8.

Mr. Mayne entered the service of the Canadian Pacific in June, 1918, as assis-

G. E. Mayne

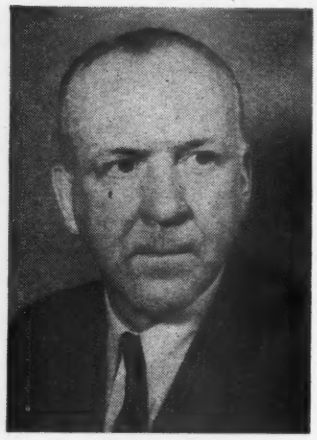
tant agent at Sulphide, Ont., and served successively as operator and train dispatcher at Brownville Junction, Me: London, Ont.; Toronto and points on the Schreiber division until June, 1944, when he was appointed assistant superintendent of the Toronto terminals and Bruce division. In the following year he was transferred to Sudbury and in 1946 to North Bay.

P. L. Peffer, general superintendent of the New York, Chicago & St. Louis, has had his headquarters changed from Cleveland, Ohio, to Bellevue.

L. N. Gagnon, assistant superintendent of the Levis division of the Canadian National at Levis, Que., has been promoted to superintendent of the Cochrane division at Cochrane, Ont., succeeding **R. B. Corrigan,** who has been appointed assistant superintendent of the St. Jerome division at Montreal, Que. **A. O. Lalonde,** trainmaster of the St. Lawrence division at Montreal, has been appointed assistant superintendent of the Cochrane division at Parent, to succeed J. E. Bourgault, who has been transferred to the Levis division at Levis, Que., succeeding Mr. Gagnon.

TRAFFIC

G. H. Reinbrecht, coal traffic manager of the Chesapeake & Ohio, with headquarters at Cleveland, Ohio, has been appointed general coal traffic manager, with the same headquarters. Mr. Reinbrecht was born at New York on May 13, 1894,



G. H. Reinbrecht

and entered railroad service on December 1, 1910, as office boy for the Erie. He served successively with that road as file clerk, stenographer, reconsignment clerk, rate clerk and chief clerk until November, 1920, when he became coal freight agent. In December, 1924, Mr. Reinbrecht was appointed general coal freight agent of the Erie and in February, 1927, he was appointed coal traffic manager, which position he held until March 31, 1936, when he left the Erie and became coal traffic manager of the Chesapeake & Ohio.

Richard R. Hollinger, whose promotion to foreign freight traffic manager of the Texas & Pacific, with headquarters at New Orleans, La., was reported in the *Railway Age* of February 8, was born on February 14, 1889, at Tallahassee, Fla., and attended Florida State College. He began his railway service in 1906 with the Norfolk & Western as clerk-stenographer

Richard R. Hollinger

in the road's New York Office, and was successively associated there with the St. Louis Southwestern, Ocean Steamship Company and the International & Great Northern. In 1911 he joined the T. & P. as chief clerk at New York, becoming traveling freight agent there in 1913 and general agent at Pittsburgh, Pa., in 1920. Mr. Hollinger was advanced to general eastern agent at New York in 1921, and to assistant general freight agent at Dallas in 1922. He was transferred in 1926 to New Orleans, holding the position of assistant general freight agent there at the time of his recent appointment.

J. A. McCaul has been appointed director of industrial development of the Texas & Pacific, with headquarters at Dallas, Tex.

Michael R. Fitzgerald has been appointed general agent of the Erie at Boston, Mass., succeeding **Donald S. Day,** promoted.

M. L. Paulson, commercial agent of the New York, Ontario & Western at Boston, Mass., has been promoted to general agent there.

Frank J. Loughlin, whose promotion to general freight agent of the Texas & Pacific, with headquarters at New Orleans, La., was reported in the *Railway Age* of

Frank J. Loughlin

February 8, was born on September 23, 1894, at Dallas, Tex., and entered railway service in 1912 with the T. & P. Mr. Loughlin subsequently held various rate positions at Dallas, including that of chief clerk in the general freight office. In 1933 he went to New Orleans as assistant general freight agent, the position he held at the time of his recent appointment.

Ferd W. Kuhn, general freight agent of the Chicago, Indianapolis & Louisville, has been promoted to freight traffic manager, with headquarters as before at Chicago.

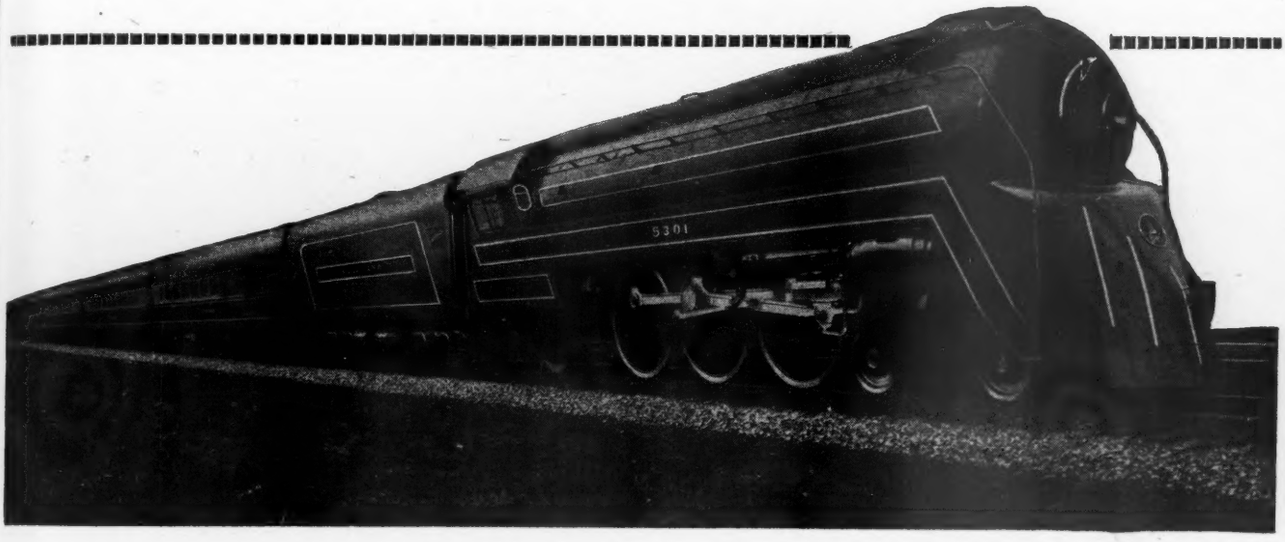
R. P. C. McLeod, general freight and passenger agent of the Ontario Northland, has been appointed traffic manager, with headquarters as before at North Bay, Ont., succeeding **C. O. Baker,** assigned to other duties.

R. B. Warner, assistant general freight agent of the Atlantic Coast Line at Wilmington, N. C., has been promoted to general freight agent, with the same headquarters. **S. G. Williams,** assistant to freight traffic manager at Jacksonville, Fla., has been appointed assistant general freight agent at Wilmington. **Thomas**

News Department continued on next left-hand page

SECURITY SECTIONAL ARCH

in The Cincinnatian

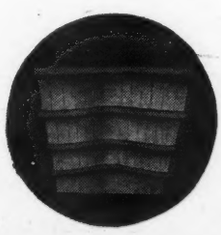


For the sustained performance of the modern high-speed steam locomotive — exemplified by the B & O Cincinnatian — every essential operating element must be kept at full efficiency.

This includes the maintenance, at all times, of a complete brick arch in the firebox to aid in securing the utmost possible power from every ton of fuel.

Not only is the Security Sectional Arch invaluable toward obtaining maximum steaming power, but also for the fuel saving it effects.

HARBISON-WALKER REFRACTORIES CO.
Refractories Specialists



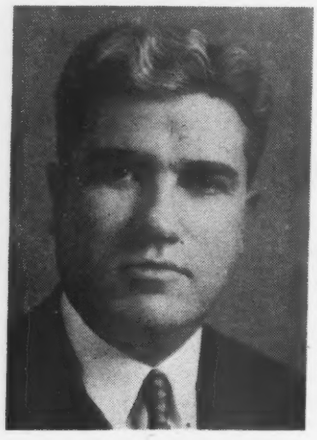
AMERICAN ARCH CO. INC.
60 East 42nd Street, New York 17, N. Y.
Locomotive Combustion Specialists

Fuller has been appointed assistant general freight agent at Wilmington and **C. E. Bond** has been appointed assistant to freight traffic manager at Jacksonville. **C. P. Wood** has been appointed general agent at Tallahassee, Fla.

E. D. Hill has been appointed assistant general freight agent of the Fort Worth & Denver City and the Wichita Valley (parts of the Chicago, Burlington & Quincy system) with headquarters at Fort Worth, Tex., succeeding **F. A. Swenson,** who has retired.

The following district freight agents, whose appointments on behalf of the Canadian Pacific were reported in the *Railway Age* of February 1, also serve in their respective positions for the Minneapolis, St. Paul & Sault Ste. Marie: **I. M. Kiley,** Cincinnati, Ohio; **J. C. Waddell,** Indianapolis, Ind.; and **T. E. Reuter,** St. Louis, Mo.

Alva S. Baker, whose appointment as manager of merchandise traffic of the Baltimore & Ohio at Baltimore, Md., was reported in the *Railway Age* of February 8, entered the service of the Baltimore &

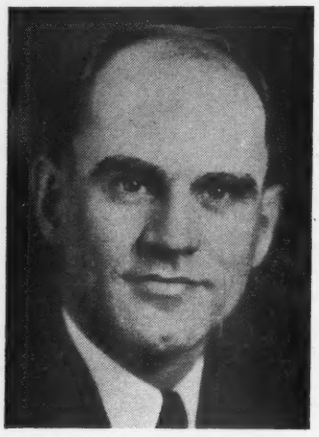


Alva S. Baker

Ohio as clerk in the general freight office at Baltimore on April 1, 1907. After filling various positions in the general freight offices, Mr. Baker was promoted to chief clerk to the vice-president in April, 1923. In June, 1926, he went to Chillicothe, Ohio, as division freight agent, transferring to Akron, Ohio, on June 1, 1928, and to Newark, Ohio, on September 1, 1930. Mr. Baker was appointed assistant to vice-president in charge of traffic at Baltimore on December 16, 1930, which position he held until his recent appointment as manager of merchandise traffic.

Clifford J. Connolly, general agent, freight department, of the Delaware & Hudson at Cleveland, Ohio, has been appointed coal freight agent at Albany, N. Y., succeeding **John T. Walsh,** deceased. **Joseph F. Hartman,** commercial agent at Buffalo, N. Y., has been appointed general agent, freight department at Cleveland, succeeding Mr. Connolly.

Elmer A. Schofield, whose appointment as assistant freight traffic manager of the Baltimore & Ohio at Cincinnati, Ohio, was reported in the *Railway Age* of February 8, entered the service of the Cincinnati, Hamilton & Dayton (now Baltimore & Ohio) in September, 1910, as clerk. He advanced through various positions in the general freight traffic department and was appointed freight rep-



Elmer A. Schofield

resentative in June, 1920, and was promoted to assistant commercial agent in February, 1930. In March, 1932, he became commercial agent, being promoted to assistant general freight agent at Cincinnati on January 1, 1937. Mr. Schofield was promoted to general freight agent at Cincinnati, on September 1, 1943, the position he held until his recent promotion to assistant freight traffic manager.

B. C. Pate has been appointed assistant general passenger agent of the Gulf, Mobile & Ohio and the Alton, with headquarters at St. Louis, Mo. Other recent appointments there are: **D. G. Barnard,** general agent, passenger department **C. S. Bluestone,** general agent, passenger department and **Roy J. Fischer,** division passenger agent.

R. T. Anderson, passenger traffic manager of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., has been promoted to assistant general passenger traffic manager at Chicago. He is succeeded by **Ross E. Chappell,** general passenger agent at Los Angeles, Cal., who in turn is succeeded by **Sigurd Carlson,** assistant general passenger agent at Topeka. Mr. Carlson is replaced by **H. N. Davis,** division passenger agent at Oklahoma City, Okla.

W. C. Hymus, industrial agent of the Central region of the Canadian National, has been appointed assistant industrial commissioner of that region at Toronto, Ont. The position of industrial agent of the Central region, formerly held by Mr. Hymus, has been abolished. **E. B. Harkness,** supervisor industrial operations, has been appointed industrial agent of the Montreal district and Montreal & Southern Counties, Railway, with headquarters at Montreal, Que., succeeding **M. W. Kiel,** who has been assigned to other duties.

Robert S. Willock, whose retirement as general freight agent of the Louisville & Nashville at Montgomery, Ala., was reported in the *Railway Age* of February 8, was born on March 19, 1872, at Elkton, Ky. He entered railway service in 1890 with the L. & N. at Clarksville, Tenn., subsequently serving there as yard clerk and chief clerk, and as local freight agent at Milan, Tenn. He later held various positions on the road, advancing to general agent at Nashville, Tenn., on November 15, 1902, and to division freight agent at Memphis, Tenn., in 1916. He was transferred to Nashville in 1919, where he remained until February 1, 1935, when he was advanced to general freight agent at Montgomery. Mr. Willock held the latter position at the time of his retirement.

John Kindred Morgan, whose appointment as assistant freight traffic manager of the Seaboard Air Line at Norfolk, Va., was reported in the *Railway Age* of February 15, was born on September 18, 1888, in Upson county, Ga. After a high school education, Mr. Morgan entered railroad service in November, 1906, with the Georgia, Southern & Florida as a stenographer at Macon, Ga. From February to April, 1909, he served with the Atlanta, Birmingham & Atlantic (now Atlantic Coast Line) and from May, 1909, to November, 1911, he was with the Georgia, Florida & Alabama (now Seaboard Air Line). Mr. Morgan entered the service of the Seaboard Air Line in November, 1911, as chief clerk to assistant general freight agent at Jacksonville, Fla., and in November, 1915, he became chief clerk to assistant freight traffic manager at Norfolk, Va. On March 2, 1920, he became chief clerk to freight traffic manager at Norfolk and on September 1, 1925, he was appointed assistant to freight traffic manager at Norfolk, the position he held until his recent promotion to assistant freight traffic manager.

ENGINEERING & SIGNALING

F. L. Brownlee has been promoted to supervisor of signals of the Jacksonville Terminal, at Jacksonville, Fla., succeeding **J. F. Morsch,** retired.

D. H. Dowe, general steel bridge inspector of the Seaboard Air Line, has been appointed assistant engineer of bridges, with headquarters at Norfolk, Va.

B. Laubenfels, division engineer of the Chicago, Burlington & Quincy, at Burlington, Iowa, has been appointed engineer grade separation, with headquarters at Chicago. **F. L. McLean** has been appointed acting division engineer at Burlington, succeeding Mr. Laubenfels.

R. C. Bailey has been appointed supervisor of signals of the Richmond, Fredericksburg & Potomac, with headquarters at Richmond, Va., succeeding **W. K. Saunders,** who has retired after 45 years of service. The position of signal inspector has been abolished.

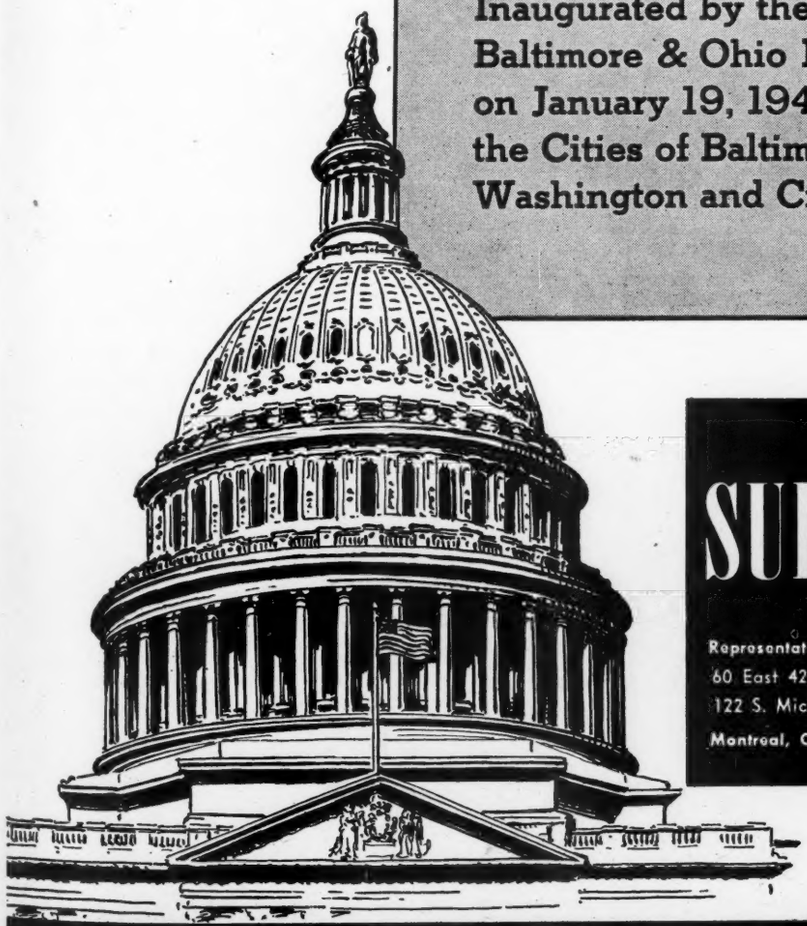
Eli Christiansen, assistant engineer of buildings on the Chicago, Rock Island & Pacific, at Chicago, has been appointed engineer-architect, with the same headquarters, succeeding **A. T. Hawk,** whose

News Department continued on next left-hand page

The CINCINNATIAN

A *Modern* STREAMLINED STEAM Train

Inaugurated by the Baltimore & Ohio Railroad System on January 19, 1947, between the Cities of Baltimore, Washington and Cincinnati



THE SUPERHEATER COMPANY

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Montreal, Canada, THE SUPERHEATER COMPANY, LTD.

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recent retirement was reported in the *Railway Age* of January 4.

L. E. Lyon, assistant division engineer of the Southern Pacific, at Tucson, Ariz., has been appointed division engineer on the Rio Grande division, with headquarters at El Paso, Tex., succeeding **W. M. Jaekle,** who has been transferred to the Coast division, with headquarters at San Francisco, Cal., to replace **J. B. Dawson,** assigned to other duties.

F. G. Campbell, the announcement of whose appointment as chief engineer of the Elgin, Joliet & Eastern, with headquarters at Joliet, Ill., appeared in the *Railway Age* of February 8, was born at Meade, Kan., on May 9, 1891, and received his higher technical training at Kansas State Agriculture College. In November, 1911, he entered the service of the Kansas City Southern as rodman. In September 1912, he was promoted to transitman. Two months later he went with the Chicago Milwaukee, St. Paul & Pacific as an instrumentman, and afterwards he served as resident engineer and assistant engineer.

F. G. Campbell

Released from the armed forces on November, 1918, he returned to the Milwaukee as an assistant engineer, and was promoted to cost engineer in April, 1923. From March to December, 1926, he served with Mark W. Potter on the appraisal of the Consolidated Railroads of Cuba. In January, 1927, he was appointed assistant valuation engineer of the Elgin, Joliet & Eastern, at Joliet, Ill., and two years later, promoted to valuation engineer. Mr. Campbell was appointed special engineer in August, 1933, and served in that capacity until January, 1939, when he was advanced to assistant chief engineer, the position he held at the time of his recent promotion.

Thomas W. White, the announcement of whose retirement as district engineer of the Canadian National, with headquarters at Edmonton, Alta., appeared in the *Railway Age* of January 25, was born at Clinton, Ont., on November 29, 1880, and received his higher education at Wesley College, Winnipeg, Man. He entered railroad service in 1901, as a rodman on location and construction west of Winnipeg. In the spring of 1903 he was transferred to the bridge engineering department, in which, on June 1, 1905, he was appointed assistant engineer, with headquarters at Winnipeg. On October 1, 1911, Mr. White was promoted to division engineer, bridge engineering department, with the same headquarters, and served in that capacity until January 1, 1919, when he was advanced to district engineer, at Edmonton, the position he held at the time of his retirement.

MECHANICAL

J. L. Carver, research engineer of the Illinois Central, at Chicago, has been appointed mechanical and research engineer, with the same headquarters.

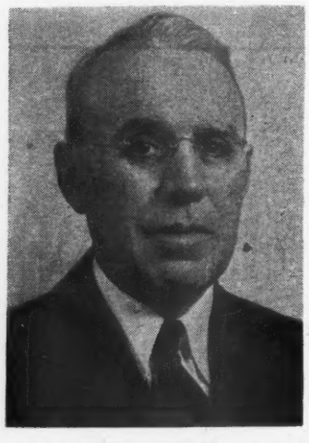
R. W. Savidge, head chemist of the Union Pacific at Omaha, Neb., has been appointed chief chemist, a newly created position.

Elmer A. Kuhn, master mechanic of the Pere Marquette at Saginaw, Mich., has been promoted to superintendent of motive power, with headquarters at Grand Rapids, Mich.

Lee Robinson, superintendent of equipment, of the Illinois Central, with headquarters at Chicago, has been appointed superintendent of Diesel power and shop machinery, with the same headquarters. **G. J. Lehnerer,** mechanical engineer at Chicago, has been appointed assistant to general superintendent of equipment there.

SPECIAL

Paul O. Ellis, whose promotion to superintendent of safety of the Missouri-Kansas-Texas, with headquarters at Dallas, Tex., was reported in the *Railway Age* of February 8, was born on May 2, 1892, at Erie, Kan., and attended the University of Kansas. He entered service on the Katy in 1910 as yard clerk, and was transferred later to the road's engineering department.



Paul O. Ellis

In 1919 he was appointed accounting engineer at Dallas, and was head of the valuation bureau until March, 1923, when he was appointed yardmaster at McAlester, Okla. He was advanced to assistant superintendent of the Southern district there in 1942, and later was transferred to Franklin, Mo. In November, 1946, he was appointed assistant superintendent of safety at Dallas, the position he held at the time of his recent promotion.

Milton W. Kirby, Jr., train conductor of the Southern at Birmingham, Ala., has been promoted to safety supervisor at Atlanta, Ga.

OBITUARY

Theron O. Jennings, who retired in 1944 as general coal agent of the Chicago, Rock Island & Pacific at Chicago, died at Des Moines, Iowa, on February 10.

Charles F. Ehrlich, who retired in April, 1946, as assistant engineer on the Missouri Pacific, with headquarters at St. Louis, Mo., died recently at his home in Arcadia, Mo.

Timothy H. Sullivan, who retired in 1930 as superintendent of the Iowa division of the Illinois Central, with headquarters at Ft. Dodge, Iowa, died in that city on February 11.

William C. Fitch, whose retirement as general freight claim agent of the Southern Pacific at San Francisco, Cal., was reported in the *Railway Age* of September 28, 1946, died suddenly at his home in that city on February 13.

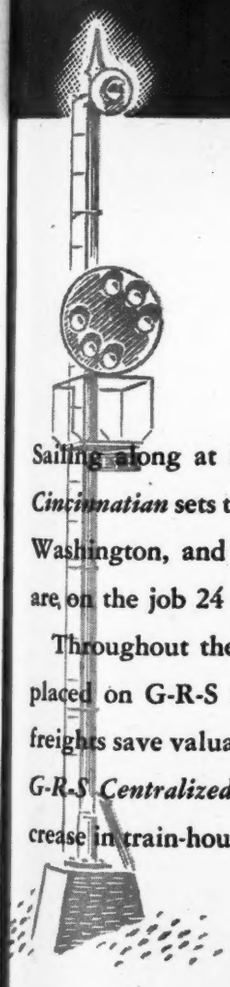
W. E. Norton, assistant passenger traffic manager of the Canadian National at Montreal, Que., died suddenly last week, in his 58th year. Mr. Norton was born in England on August 3, 1889, and entered railroad service on May 1, 1908, as clerk with the Grand Trunk (now Canadian National) at Montreal. After serving as accounts clerk, rate clerk, assistant chief rate clerk and chief rate clerk, he was appointed chief of the tariff bureau of the Canadian National at Montreal on January 1, 1933. On December 19, 1940, he became chief of the tariff and ticket bureau at Montreal and on September 1, 1944, he was appointed assistant passenger traffic manager, the position he held at the time of his death.

Egbert Irvin Rogers, former president of the Peoria & Pekin Union, who retired from that position in 1945, and whose death was reported in the *Railway Age* of February 8, was born on August 3, 1876, at St. Joseph, Mo., and was graduated from the University of Missouri in 1897. In that same year he began his railway career with the Illinois Central as track apprentice, and from 1898 to 1912 he served as instrumentman, assistant engineer, division engineer and roadmaster for the I. C. and the Yazoo & Mississippi Valley. He subsequently served as chief engineer for the Lorimer & Gallagher Co., East St. Louis, Ill., and later, for the Texas City Transportation Company, Texas City, Tex. Returning to the I. C. in 1916, Mr. Rogers became engaged in valuation work, followed by his appointment as roadmaster of the Iowa division at Fort Dodge, Iowa. He became chief engineer of the P. & P. U. in 1921, and was elevated to the presidency of that company in 1929, serving in that capacity until his retirement in 1945.

A table of freight operating statistics appears on the second left-hand page.

THE CINCINNATIAN

G-R-S modern signal systems



Sailing along at high speed, the B&O's luxurious *Cincinnatian* sets the fastest time between Baltimore, Washington, and Cincinnati — and G-R-S signals are on the job 24 hours a day!

Throughout the Baltimore and Ohio, reliance is placed on G-R-S modern signal systems. Tonnage freights save valuable time between terminals—with *G-R-S Centralized Traffic Control.* Substantial decrease in train-hours is being effected — with the use of *G-R-S Remote Control.* Additional savings in time and money result from the use of *G-R-S Electric Interlocking installations, Automatic Block Signals, and other signal modernizations.*

The advantages of these signal systems vary from road to road. G-R-S engineers will be glad to show you just what G-R-S modern signal systems can do for *your* road. Call on them, without obligation, at our nearest district office.

GRS General Railway Signal Company

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Freight Operating Statistics of Large Steam Railways—Selected

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net-rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: B. O.	Road locos. on line: Per cent B. O.
New England Region:												
Boston & Albany 1946	362	154,608	173,935	29,572	3,786	63.5	241,888	98,078	62	3	22	25.3
1945	362	146,470	162,637	21,617	3,410	64.7	215,807	88,976	65	11	14	15.6
Boston & Maine 1946	1,750	333,442	344,347	13,569	12,807	71.3	784,621	342,099	109	18	15	10.6
1945	1,777	313,773	328,090	14,900	11,648	69.6	726,621	313,343	121	1	20	14.1
N. Y., New H. & Hartf* 1946	1,815	386,914	524,493	45,934	15,429	73.2	892,571	397,718	189	12	67	26.5
1945	1,815	359,825	499,570	34,522	14,133	74.5	804,855	359,022	209	27	33	18.3
Great Lakes Region:												
Delaware & Hudson 1946	795	273,041	330,740	33,932	12,270	69.0	850,406	446,703	132	53	20	9.8
1945	846	261,028	314,767	33,244	11,604	69.6	806,169	429,105	112	73	31	14.4
Del., Lack. & Western 1946	971	323,984	367,203	45,707	14,208	71.5	914,371	415,666	104	20	49	28.3
1945	971	309,728	348,153	40,606	13,066	70.9	843,697	395,227	115	38	56	26.8
Erie 1946	2,228	765,607	812,371	63,999	38,265	67.4	2,478,390	1,067,094	276	17	98	25.1
1945	2,243	751,587	799,018	61,700	36,461	68.7	2,317,790	992,085	278	46	68	17.3
Grand Trunk Western 1946	972	266,319	271,122	2,091	9,162	71.1	552,871	237,947	69	1	7	9.1
1945	1,026	254,410	263,079	1,676	7,792	68.8	500,234	227,647	66	...	8	10.8
Lehigh Valley 1946	1,242	315,846	352,950	59,197	14,711	71.3	988,696	494,843	116	15	38	22.5
1945	1,242	323,895	355,765	52,043	13,420	67.7	934,330	466,220	123	32	14	8.3
New York Central 1946	10,326	3,157,321	3,370,881	218,653	121,860	64.7	8,099,837	3,655,905	1,007	21	380	27.0
1945	10,331	3,143,572	3,397,609	238,151	113,717	64.2	7,837,087	3,660,003	1,064	60	294	20.7
New York, Chi. & St. L. 1946	1,656	602,132	605,849	8,169	25,641	70.9	1,570,739	712,820	142	4	21	12.6
1945	1,656	575,165	585,782	7,939	23,013	71.8	1,425,370	639,517	150	20	24	12.4
Pere Marquette 1946	1,913	388,311	396,423	8,627	13,229	66.6	868,564	382,722	130	1	31	19.1
1945	1,915	332,399	342,553	8,313	10,889	69.9	713,810	333,560	121	19	24	14.6
Pitts. & Lake Erie 1946	229	95,152	96,912	16	3,713	62.4	311,565	176,436	24	11	15	30.0
1945	229	93,291	94,583	161	3,533	59.8	307,735	173,668	31	...	19	38.0
Wabash 1946	2,381	652,748	666,436	16,617	24,762	73.8	1,536,660	705,039	158	9	41	19.7
1945	2,381	649,255	675,835	17,299	22,075	72.6	1,381,380	625,998	167	12	32	15.2
Central Eastern Region:												
Baltimore & Ohio 1946	6,103	2,027,995	2,515,980	275,448	70,482	66.3	4,915,027	2,424,786	792	20	351	30.2
1945	6,095	2,098,476	2,617,182	279,850	71,914	64.0	5,294,356	2,666,154	868	47	252	21.6
Central of New Jersey* 1946	419	81,751	92,669	19,696	3,199	69.5	226,571	119,383	47	1	33	40.7
1945	654	170,713	197,286	39,808	6,117	69.0	438,824	224,650	97	12	37	25.3
Central of Pennsylvania 1946	213	81,395	95,714	20,611	2,877	69.7	209,477	111,809	38	7	29	39.2
1945	...	...	...	...	...	...	...	...	...	...	...	...
Chicago & Eastern Ill. 1946	910	175,687	176,726	3,949	5,172	72.3	329,036	160,983	59	...	18	23.4
1945	910	185,444	186,559	4,064	4,958	71.1	332,394	168,338	55	7	14	18.4
Elgin, Joliet & Eastern 1946	391	121,629	125,880	3,990	3,658	66.1	278,575	148,577	50	1	12	19.0
1945	392	107,900	113,578	2,911	3,112	65.8	242,868	131,316	50	1	25	32.9
Long Island 1946	372	42,102	43,494	17,918	537	59.8	37,224	16,227	42	...	...	...
1945	372	34,722	36,377	15,629	420	57.5	29,001	11,585	45	...	3	6.3
Pennsylvania System 1946	10,033	4,007,599	4,627,339	635,619	159,322	66.3	11,019,169	5,339,587	1,818	135	286	12.8
1945	10,024	3,895,734	4,541,533	626,295	149,984	65.2	10,543,943	5,161,091	1,921	95	195	8.8
Reading 1946	1,361	495,271	551,042	63,796	16,687	66.5	1,257,038	687,545	244	23	60	18.3
1945	1,364	500,849	559,165	65,460	16,375	66.1	1,237,706	676,667	267	11	48	14.7
Pocahontas Region:												
Chesapeake & Ohio 1946	3,067	1,024,824	1,102,796	51,021	45,058	56.1	3,792,906	2,115,187	454	3	68	13.0
1945	3,045	1,073,741	1,162,508	56,523	50,426	57.9	4,354,074	2,554,254	467	3	41	8.0
Norfolk & Western 1946	2,108	654,613	697,693	46,541	29,621	60.5	2,408,807	1,286,746	254	43	22	6.9
1945	2,139	694,268	744,584	58,633	33,725	60.1	2,883,366	1,590,637	242	76	21	6.2
Southern Region:												
Atlantic Coast Line 1946	5,554	1,027,249	1,041,733	14,447	27,259	67.4	1,745,954	784,154	386	33	35	7.7
1945	5,553	1,004,881	1,025,007	16,547	25,210	65.6	1,635,751	725,965	414	6	34	7.5
Central of Georgia* 1946	1,782	312,594	318,812	6,993	7,960	72.0	518,129	240,914	92	...	7	7.1
1945	1,783	315,374	323,236	6,167	7,739	71.0	498,409	233,824	95	...	7	6.9
Gulf, Mobile & Ohio 1946	1,931	259,671	306,576	3,400	10,800	76.8	664,257	315,118	117	10	4	3.1
1945	1,930	318,911	392,084	2,612	10,641	71.9	686,659	325,093	101	1	11	9.7
Illinois Central 1946	6,582	1,452,898	1,467,144	52,019	56,427	68.8	3,679,320	1,741,242	592	4	90	13.1
1945	6,605	1,451,062	1,472,180	51,787	50,793	63.9	3,564,741	1,680,542	602	45	68	9.5
Louisville & Nashville 1946	4,750	1,425,270	1,550,322	39,697	36,411	65.8	2,506,837	1,268,677	390	10	73	15.4
1945	4,749	1,464,001	1,585,106	40,709	37,757	63.1	2,708,942	1,381,027	412	21	59	12.0
Seaboard Air Line 1946	4,143	888,481	959,831	14,990	27,157	70.8	1,755,108	798,871	284	...	52	15.5
1945	4,140	854,788	907,777	15,332	24,560	69.4	1,577,372	703,452	281	10	52	15.2
Southern 1946	6,450	1,958,252	1,992,002	33,813	48,456	74.2	2,909,503	1,321,124	595	3	103	14.7
1945	6,471	2,015,854	2,045,070	34,034	45,780	68.3	2,931,880	1,337,378	581	16	117	16.4
Northwestern Region:												
Chi. & North Western 1946	8,062	1,035,394	1,070,461	28,655	34,997	71.1	2,227,141	997,415	355	6	148	29.1
1945	8,062	1,055,990	1,098,337	28,310	33,155	68.4	2,208,399	1,044,382	349	24	132	26.1
Chicago Great Western 1946	1,445	281,238	283,039	14,052	9,197	71.2	590,166	262,911	69	..	11	13.8
1945	1,445	282,514	288,158	18,033	8,849	70.5	571,613	249,433	69	..	9	11.5
Chi., Milw., St. P. & Pac. 1946	10,725	1,485,173	1,566,726	61,944	51,976	69.4	3,331,569	1,530,591	493	23	101	16.4
1945	10,723	1,381,110	1,469,785	94,488	45,990	66.5	3,097,389	1,442,361	511	22	76	12.5
Chi., St. P., Minneap. & Om. 1946	1,606	216,261	228,161	14,400	5,971	74.3	386,744	177,618	80	..	36	31.0
1945	1,606	207,776	222,092	14,063	5,731	73.0	369,555	173,528	89	4	26	21.8
Duluth, Missabe & Iron Range 1946	547	110,720	111,758	919	5,371	50.8	492,068	295,858	44	2	1	2.1
1945	546	67,602	67,777	1,433	2,871	51.8	256,721	149,102	19	18	20	35.1
Great Northern 1946	8,236	1,150,923	1,155,529	48,195	43,155	66.1	3,012,420	1,406,597	386	32	96	18.7
1945	8,237	1,096,896	1,097,440	40,755	39,082	64.2	2,729,268	1,221,788	359	57	51	10.9
Minneap., St. P. & S. St. M. 1946	4,181	467,318	477,714	9,240	13,506	67.3	884,160	410,954	128	..	18	12.3
1945	4,181	478,527	493,188	8,795	12,849	65.3	879,202	413,198	129	..	10	7.2
Northern Pacific 1946	6,624	936,859	1,000,921	62,943	37,353	72.2	2,451,296	1,213,979	366	5	54	12.7
1945	6,577	878,985	940,490	63,958	31,908	69.5	2,200,872	1,071,688	383	7	54	12.2
Central Western Region:												
Alton* 1946	915	169,948	170,616	419	5,582	72.8	349,262	181,022	64	10	39	34.5
1945	915	224,635	237,044	1,744	5,533	68.6	373,885	178,306	76	4	13	14.0
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.) 1946	13,084	2,907,705	3,075,744	163,008	108,351	71.1	6,751,092	2,759,032	739	80	145	15.0
1945	13,112	2,808,377	2,973,673	148,884	98,918	68.2	6,421,430	2,621,609	837	26	144	14.3
Chi., Burl. & Quincy 1946	8,671	1,333,694	1,386,966	52,568	51,497	67.7	3,396,604	1,536,668	462	22	61	11.2
1945	8,768	1,380,565	1,463,602	53,558	49,476	64.8	3,386,750	1,546,455	456	..	60	11.6
Chi., Rock I. & Pac.* 1946	7,619	1,234,319	1,267,062	18,547	39,384	66.8	2,597,875	1,153,939	294	23	93	22.7
1945	7,715	1,249,319	1,301,884	17,944	37,952	67.8	2,467,664	1,112,683	373	..	82	18.0
Denver & R. G. Wn.* 1946	2,366	415,865	458,479	65,273	12,170	76.5	782,908	389,037	135	29	52	24.1
1945	2,386	434,779	476,425	76,102	12,948	75.5	830,447	408,407	189	7	36	15.5
Southern Pacific Company 1946	8,158	2,317,006	2,635,806	457,490	94,847	73.4	5,998,220	2,655,135	778	..	216	21.7
1945	8,173	1,909,176	2,177,003	376,485	80,324	72.7	4,992,537	2,143,327	758	..	179	19.1
Union Pacific 1946	9,775	2,791,128	2,925,196	235,390	104,012	69.6	6,734,478	2,929,848	759	32	119	13.1
1945	9,777	2,768,430	2,887,621	202,139	98,940	68.2	6,376,408	2,862,349	784	52	102	10.9
Southwestern Region:												
Mo.-Kans.-Texas Lines 1946	3,241	501,385	515,714	9,482	15,163	70.5	952,150	429,627	108	..	61	36.1
1945	3,241	494,247	505,698	9,773	13,171	68.1	855,393	393,593	130	16	18	11.0
Missouri Pacific* 1946	7,011	1,399,603	1,457,175	34,631	48,105	71.5	3,075,137	1,415,948	415	3	73	14.9
1945	7,055	1,402,179	1,493,465	40,386	47,530	67.2	3,188,106	1,452,777	444	1	73	14.1
Texas & Pacific 1946	1,871	357,310	357,310	8,848	11,896	71.0	752,289	329,222	107	43	4	2.6
1945	1,871	325,218	325,218	7,122	10,319	68.6	683,485	292,903	115	42	11	6.5
St. Louis-San Francisco* 1946	4,615	971,477	1,016,978	10,851	23,691	68.5	1,560,186	712,465	300	6	30	8.9
1945	4,615	1,018,182	1,065,582	14,044	23,822	65.4	1,603,751	726,922	318	..	28	8.1
St. Louis, San Fran. & Texas 1946	156	34,252	35,331	5	578	57.9	42,506	17,584	9	..	2	18.2
1945	161	35,876	37,660	64	581	70.7	38,113	17,282	8	..	1	11.1
St. Louis Southw. Lines* 1946	1,568	351,437	354,007	4,668	14,925	80.8	863,067	385,803	91	16	21	16.4
1945	1,600	343,372	347,314	4,680	12,533	79.2	724,424	323,798	96	23	22	15.6
Texas & New Orleans 1946	4,321	998,273	999,661	9,888	28,402	77.4	1,768,947	832,955	217	1	39	15.2
1945	4,321	862,211	863,165	15,317	24,062	74.6	1,487,975	679,369	237	6	31	11.3

* Report of trustee or trustees.

Items for the Month of November 1946 Compared with November 1945

Region, road, and year		Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl.locos. and tenders	G.t.m. per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New England Region:														
Boston & Albany	1946	300	6,269	6,569	0.3	23,245	1,573	638	25.9	507	30.8	9,031	181	85.9
	1945	333	5,603	5,936	0.5	22,900	1,489	614	26.1	553	32.7	8,193	202	74.5
Boston & Maine	1946	1,582	11,444	13,026	2.2	36,376	2,357	1,028	26.7	848	44.5	6,516	103	90.6
	1945	1,875	10,567	12,442	2.0	34,924	2,320	1,001	26.9	806	43.1	5,878	105	85.0
N. Y., New H. & Hartf*	1946	1,352	19,872	21,224	1.8	32,342	2,313	1,030	25.8	583	30.9	7,304	93	78.1
	1945	2,543	20,324	22,867	3.5	29,804	2,241	1,000	25.4	545	28.8	6,594	91	69.5
Great Lakes Region:														
Delaware & Hudson	1946	2,477	6,726	9,203	2.8	53,885	3,135	1,647	36.4	1,535	61.1	18,730	113	62.7
	1945	3,046	5,680	8,726	3.6	53,142	3,108	1,654	37.0	1,571	61.0	16,907	109	56.7
Del., Lack. & Western	1946	4,093	13,929	18,022	3.6	44,271	2,861	1,300	29.3	755	36.1	14,269	113	89.0
	1945	4,791	11,259	16,050	4.1	41,553	2,760	1,293	30.2	826	38.5	13,568	116	69.7
Erie	1946	5,393	30,844	36,237	2.1	52,996	3,270	1,408	27.9	963	51.2	15,965	99	82.7
	1945	10,070	26,224	36,294	4.5	50,757	3,104	1,329	27.2	948	50.7	14,743	101	79.6
Grand Trunk Western	1946	3,556	10,062	13,618	5.5	39,612	2,088	899	26.0	560	30.4	8,160	92	131.6
	1945	3,033	7,344	10,377	4.5	39,111	1,976	899	29.2	715	35.6	7,396	95	127.4
Lehigh Valley	1946	4,509	14,805	19,314	3.3	52,615	3,225	1,614	33.6	840	35.0	13,280	110	85.7
	1945	6,767	14,463	21,230	3.9	50,018	2,995	1,495	34.7	718	30.5	12,513	107	85.0
New York Central	1946	42,769	105,765	148,534	3.4	39,482	2,595	1,171	30.0	790	40.7	11,802	110	96.7
	1945	50,436	93,743	144,179	4.2	39,230	2,537	1,185	32.2	900	43.6	11,809	114	96.6
New York, Chi. & St. L.	1946	1,952	12,402	14,354	2.0	48,971	2,620	1,189	27.8	1,631	82.8	14,348	90	132.6
	1945	2,849	12,680	15,529	3.3	46,078	2,486	1,116	27.8	1,380	69.1	12,873	96	109.2
Pere Marquette	1946	3,016	12,963	15,979	3.6	36,593	2,248	990	28.9	776	40.3	6,669	100	89.6
	1945	4,354	10,260	14,614	4.7	37,189	2,159	1,009	30.6	769	35.9	5,806	100	78.6
Pitts. & Lake Erie	1946	2,422	9,793	12,215	2.7	47,918	3,286	1,861	47.5	491	16.6	25,682	103	70.1
	1945	3,099	9,259	12,358	3.9	48,455	3,305	1,865	49.2	451	15.3	25,279	86	69.4
Wabash	1946	5,133	14,750	19,883	2.6	45,086	2,379	1,092	28.5	1,100	52.3	9,870	111	114.9
	1945	6,305	13,389	19,694	4.4	40,822	2,153	975	28.4	1,073	52.1	8,764	123	114.8
Central Eastern Region:														
Baltimore & Ohio	1946	38,220	53,038	91,258	3.8	30,990	2,482	1,224	34.4	907	39.8	13,244	154	82.9
	1945	41,353	53,766	95,119	4.7	30,668	2,587	1,303	37.1	932	39.3	14,581	154	85.2
Central of New Jersey*	1946	815	10,292	11,107	2.5	34,633	2,862	1,508	37.3	349	13.4	9,497	135	63.2
	1945	4,290	13,968	18,258	6.6	31,111	2,654	1,359	36.7	419	16.6	11,450	112	68.7
Central of Pennsylvania	1946	1,071	3,810	4,881	6.5	32,603	2,672	1,426	38.9	772	28.5	17,497	135	66.5
	1945	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicago & Eastern Ill.	1946	2,247	3,659	5,906	6.0	32,459	1,904	932	31.1	918	40.8	5,897	124	80.1
	1945	2,111	4,261	6,372	6.8	31,817	1,816	920	34.0	891	36.9	6,166	129	87.1
Elgin, Joliet & Eastern	1946	6,846	13,353	20,199	1.7	17,426	2,413	1,287	40.6	260	9.7	12,666	140	104.2
	1945	7,535	6,108	13,643	2.7	18,584	2,369	1,281	42.2	324	11.7	11,166	151	75.1
Long Island	1946	53	5,760	5,813	.6	6,772	901	393	30.2	88	4.9	1,454	321	71.6
	1945	29	5,272	5,301	.3	6,505	851	340	27.6	71	4.5	1,038	333	49.0
Pennsylvania System	1946	117,019	135,908	252,927	8.6	36,919	2,849	1,381	33.5	709	31.9	17,740	124	85.4
	1945	122,192	118,574	240,766	6.2	37,433	2,788	1,365	34.4	718	32.0	17,162	130	84.2
Reading	1946	10,192	24,311	34,503	2.2	32,518	2,542	1,390	41.2	674	24.6	16,839	114	73.2
	1945	11,747	23,591	35,338	2.8	31,470	2,476	1,354	41.3	651	23.8	16,536	124	73.0
Pocahontas Region:														
Chesapeake & Ohio	1946	45,913	18,659	64,572	1.9	54,365	3,778	2,107	46.9	1,156	43.9	22,989	84	79.4
	1945	41,148	16,896	58,044	1.6	57,514	4,117	2,415	50.7	1,418	48.4	27,961	81	86.8
Norfolk & Western	1946	33,175	8,751	41,926	1.3	59,834	3,728	1,991	43.4	1,173	44.6	20,347	99	83.7
	1945	29,514	7,028	36,542	1.8	64,673	4,214	2,325	47.2	1,439	50.8	24,788	89	83.9
Southern Region:														
Atlantic Coast Line	1946	7,455	21,288	28,743	3.8	27,277	1,702	764	28.8	924	47.7	4,706	119	83.7
	1945	8,861	20,431	29,292	1.5	26,566	1,641	728	28.8	841	44.5	4,358	123	83.7
Central of Georgia*	1946	1,111	6,910	8,021	1.1	30,435	1,666	774	30.3	1,035	47.5	4,506	132	116.1
	1945	1,796	6,570	8,366	1.4	29,311	1,588	745	30.2	881	41.1	4,371	142	113.9
Gulf, Mobile & Ohio	1946	1,349	6,069	7,418	1.2	45,419	2,566	1,218	29.2	1,407	62.8	5,440	82	86.3
	1945	2,171	6,790	8,961	1.1	36,675	2,159	1,022	30.6	1,198	54.5	5,615	122	122.5
Illinois Central	1946	17,030	35,753	52,783	1.0	43,393	2,607	1,234	30.9	1,151	54.2	8,818	124	78.5
	1945	20,945	31,819	52,764	1.0	40,267	2,516	1,186	33.1	1,003	47.4	8,481	127	76.1
Louisville & Nashville	1946	31,957	16,053	48,010	2.8	27,945	1,759	890	34.8	957	41.8	8,903	139	117.4
	1945	31,132	14,830	45,962	3.7	29,006	1,850	943	36.6	996	43.2	9,693	132	116.5
Seaboard Air Line	1946	4,997	19,920	24,917	1.8	34,231	2,021	920	29.4	1,088	52.2	6,427	116	108.9
	1945	6,425	18,269	24,694	2.4	32,537	1,878	838	28.6	952	47.9	5,664	128	99.3
Southern	1946	12,594	31,523	44,117	4.1	25,740	1,504	683	27.3	983	48.6	6,828	143	101.0
	1945	16,375	36,005	52,380	5.0	24,833	1,476	673	29.2	852	42.7	6,889	148	99.6
Northwestern Region:														
Chi. & North Western	1946	18,216	31,941	50,157	3.0	31,410	2,253	1,009	28.5	621	30.6	4,124	133	78.0
	1945	21,321	33,009	54,330	3.3	32,526	2,198	1,039	31.5	651	30.2	4,318	139	79.8
Chicago Great Western	1946	952	4,912	5,864	5.5	34,931	2,099	935	28.6	1,374	67.5	6,065	131	130.2
	1945	1,083	5,217	6,300	4.1	33,932	2,037	889	28.2	1,298	65.3	5,754	137	135.9
Chi., Milw., St. P. & Pac.	1946	18,085	37,858	55,943	1.7	35,254	2,263	1,040	29.4	873	42.7	4,757	122	94.9
	1945	22,893	36,847	59,740	1.7	34,737	2,262	1,053	31.4	814	39.0	4,484	128	92.5
Chi., St. P., Minneap. & Om.	1946	991	6,823	7,814	5.3	23,370	1,845	848	29.7	691	31.3	3,687	122	72.4
	1945	952	6,703	7,655	5.1	22,820	1,814	852	30.3	728	32.9	3,602	126	70.3
Duluth, Missabe & Iron Range	1946	14,761	293	15,054	3.2	76,551	4,600	2,765	55.1	666	23.8	18,029	68	89.3
	1945	15,075	236	15,311	3.6	64,277	3,955	2,297	51.9	324	12.0	9,103	91	50.7
Great Northern	1946	17,956	23,439	41,395	2.5	40,764	2,638	1,232	32.6	1,095	50.8	5,693	109	84.6
	1945	20,862	17,836	38,698	2.6	36,926	2,509	1,123	31.3	1,013	50.5	4,944	111	86.1
Minneap., St. P. & S. St. M.	1946	4,313	8,239	12,552	3.6	31,924	1,912	889	30.4	1,032	50.4	3,276	104	123.6
	1945	5,769	10,239	16,008	3.3	31,177	1,858	873	32.2	876	41.7	3,294	104	121.5
Northern Pacific	1946	14,472	16,833	31,305	3.4	41,988	2,639	1,307	32.5	1,246	53.1	6,109	148	90.7
	1945	16,713	19,143	35,856	3.9	35,886	2,532	1,233	33.6	981	42.0	5,431	138	81.2
Central Western Region:														
Alton*	1946	1,097	4,292	5,389	2.1	36,622	2,062	1,069	32.4	951	40.3	6,595	119	54.3
	1945	2,249	6,669	8,918	1.3	37,993	1,690	806	32.2	676	30.6	6,496	133	100.3
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1946	35,072	43,672	78,744	4.2	45,403	2,336	955	25.5	1,181	65.2	7,029	111	118.5
	1945	40,086	37,425	77,511	4.2	42,402	2,302	940	26.5	1,110	61.4	6,665	117	109.5
Chi., Burl. & Quincy	1946	17,767	26,015	43,782	2.0	42,672	2,557	1,157	29.8	1,195	59.1	5,907	108	95.2
	1945	17,737	29,110	46,847	2.3	39,111	2,470	1,128	31.3	1,104	54.5	5,879	116	104.3
Chi., Rock I. & Pac.*	1946	7,325	25,960	33,285	3.2	36,864	2,114	939	29.3	1,110	56.7	5,049	107	109.3
	1945	10,907	25,838	36,745	3.7	33,818	1,994	899	29.3	1,046	52.6	4,807	117	101.7
Denver & R. G. Wn.*	1946	6,677	6,829	13,506	3.0	31,137	1,897	943	32.0	949	38.8	5,481	185	85.9
	1945	7,917	6,227	14,144	4.0	28,481	1,926	947	31.5	939	39.4	5,706	182	89.1
Southern Pacific Company	1946	21,608	48,707	70,315	2.4	37,715	2,615	1,158	28.0	1,228	59.8	10,849	111	110.6
	1945	23,415	44,639	68,054	3.1	36,392	2,640	1,134	26.7	965	49.7	8,741	112	95.9
Union Pacific	1946	22,127	42,602	64,729	2.6	46,649	2,438	1,061	28.2	1,490	76.0	9,991	137	120.4
	1945	25,604	37,902	63,506	3.0	44,747	2,354	1,057	28.9	1,459	74.0	9,759	136	113.3
Southwestern Region:														
Mo.-Kans.-Texas Lines	1946	1,108	8,408	9,516	.9	35,084	1,911	862	28.3	1,541	77.1	4,419	85	108.8
	1945	1,623	6,426	8,049	.2	31,295	1,736	799	29.9	1,640	80.5	4,048	91	110.7
Missouri Pacific*	1946	16,862	26,022	42,884	1.6	40,108	2,208	1,017	29.4	1,104	52.5	6,732	110	107.3
	1945	14,666	25,797	40,463	1.5	38,482	2,284	1,014	30.6	1,236	60.1	6,864	116	105.8
Texas & Pacific	1946	1,285	6,866	8,151	2.3	38,752	2,121	928	27.7	1,384	70.4	5,865	92	84.2
	1945	1,760	6,472	8,232	1.2	37,282	2,113	905	28.4	1,180	60.6	5,218	91	72.5
St. Louis-San Francisco*	1946	4,585	13,863	18,448	1.9	31,542	1,612	736	30.1	1,292	62.7	5,146	135	107.4
	1945	6,817	15,962	22,779	1.7	30,544	1,583	717	30.5	1,088	54.5	5,250	140	109.8
St. Louis, San Fran. & Texas	1946	...	371	371	1.1	23,733	1,241	513	30.4	1,610	91.4	3,757	119	113.6
	1945	...	350	350	2.9	20,327	1,064	482	29.7	1,770	84.2	3,578	121	141.0
St. Louis Southw. Lines*	1946	1,062	5,394	6,476	2.3	46,094	2,458	1,099	25.8	1,924	92.1	8,202	82	99.1
	1945	1,223	5,602	6,825	1.7	36,652	2,116	946	25.8	1,538	75.2	6,746	91	89.1
Texas & New Orleans	1946	3,050	17,739	20,789	2.7	32,907	1,788	842	29.3	1,365	60.1	6,426	92	135.3
	1945	3,724	17,226	20,950	4.1	31,272	1,743	796	28.2	1,076	51.1	5,241	95	111.2

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to Revision.

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Current Publications

PAMPHLETS

How to Find a Home for Your Business, 12 pages. Published by J. C. Ellington, industrial commissioner of the Chicago, Milwaukee, St. Paul & Pacific, Chicago 6. This pamphlet outlines to business executives seeking plant locations the services of the road's industrial department, and the advantages to business men of making use of that organization.

Facts & Figures on Government Finance, 1946-1947. 144 pages, charts. Published by the Tax Foundation, 30 Rockefeller plaza, New York 20. Free.

This volume, the fourth in the series, contains data on the more significant developments in federal, state and local fiscal affairs. Its purpose is to supply concrete, factual, up-to-date information regarding governmental finances, and it is hoped that the information will aid readers in forming sound judgments on public policy, and in taking action to protect their interests as citizens and as taxpayers.

A History of the Claremont Railway, 1903-1945, by Donald E. Shaw. 18 pages, illustrations.. Published by the Connecticut Valley Chapter of the National Railway Historical Society. Available from Roger Borrup, agent, Warehouse Point, Conn. Price 50 cents.

This line is a 5½-mile electric freight carrier located in New Hampshire which effects interchange with the Boston & Maine. Mr. Shaw describes the line and its equipment and relates its history.

Railways of Sweden, by Seymour T. R. Abt. 12 pages. Issued by the Office of International Trade, United States Department of Commerce. Available from the Government Printing Office, Washington 25, D. C. Price, five cents.

This pamphlet contains a review of both the state-owned and privately-owned railways of Sweden. Statistics are given on equipment, traffic, mileage, employees and income. Most figures are for the year 1944. In addition, there is a brief discussion of the railway equipment industry and a list of manufacturers of railway equipment. There are two maps included—one showing the railroads in the northern part of the country, and the other showing those in the southern part.

British Railways and the Future. 20 pages. Issued by the Great Western, the London Midland & Scottish, the London & North Eastern, and the Southern Railways, 22, Palace Chambers, London, S.W. 1, England. Available in this country from the Associated British and Irish Railways, 9 Rockefeller plaza, New York 20. Free.

The railways assert that they have shown economy and efficiency in the conduct of their affairs and have, within the restrictions imposed upon them by Parliament, met in full their obligations to the public in times of both peace and war. This pamphlet outlines what conditions were when the war broke out, how the railways tackled their new tasks, what they are now doing to adapt their services to the needs of the moment, and how they plan to anticipate

and meet the needs of tomorrow. The question of state ownership versus private enterprise is not fully argued here, though the mere record of fact will inevitably raise, and possibly answer, some of the questions involved in the controversy.

The Eastern Union Railway, 1846 to 1862, by H. F. Hilton. 42 pages, illustrations. Issued by the London & North Eastern Railway, Dorset Square, London, N.W. 1, England. Price, 2s 6d.

This booklet has been issued to commemorate the opening of the Eastern Union Railway one hundred years ago. It is now a part of the London & North Eastern, and its history and development are reviewed in this booklet.

Books

Applied Atomic Power, by E. S. C. Smith, A. H. Fox, R. Tom Sawyer and H. R. Austin. 227 pages, illustrations, drawings. Published by Prentice-Hall, Inc., 70 Fifth ave., New York 11. Price, $4.

This book covers what can now be told of the history of the development, the present-day scientific status, and the possibilities as known today of the applications of atomic power to industrial progress. One section of the book discusses in detail possible methods of converting atomic energy into mechanical power and includes a chapter on the construction of atomic-powered locomotives. Another section contains a summary of industrial benefits from the very extensive research that preceded the production of atomic materials.

International Rail Transport, by Sir Ralph L. Wedgwood, assisted by J. E. Wheeler. 162 pages. Published by the Oxford University Press, 114 Fifth ave., New York 11. Price, $3.

This is the fifth in a series of studies on International Transport and Communications, the first four of which were prepared by Sir Osborne Mance. At his suggestion Sir Ralph Wedgwood prepared the present volume, which discusses the international aspects of rail transport in the various countries throughout the world. Several chapters are devoted to affairs in Europe, and one chapter each to Africa, the Middle East, the Far East and America. The concluding chapter discusses the future of international rail transport.

Articles in Periodicals

Chilean Railways Expanding: Need for Equipment is Seen. Foreign Commerce Weekly, January 25, 1947, pp. 4-5 and 46-47. Available from Government Printing Office, Washington 25, D. C. Price, 15 cents.

Plans for the expansion of the Chilean State Railways will necessitate laying new and heavier rail, enlargement of repair shops, installation of new machines and equipment, installation of new signaling, purchase of new locomotives, and finding a solution of the fuel problem. The present types of rail and equipment used; future needs; electrification plans; future outlook, and the international aspects of the railroad situation are discussed in this article. A railroad map of Chile is included.

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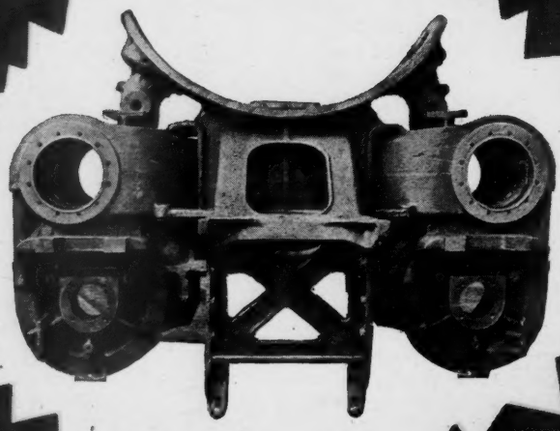

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